DOCUMENT RESUME

ED 205 868 CG 015 359

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TITLE Drinking, Driving and Deciding: An Alcohol Module for Traffic Safety Education.
INSTITUTION Washington Office of the State Superintendent of Public Instruction, Olympia.
SPONS AGENCY Washington State Commission on Traffic Safety, Olympia.
PUB DATE May 80
NOTE 221p.

EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS *Alcohol Education; Behavioral Objectives; *Decision Making; *Drinking; *Driver Education; High Schools; Learning Modules; Lesson Plans; Minicourses; *Student Responsibility; Teaching Guides; Teaching Methods; *Traffic Safety

ABSTRACT

This paper presents an alcohol-traffic safety education module which suggests a variety of teaching approaches to help students make responsible decisions about alcohol usage and driving. This instructor's guide contains a set of instructional materials designed to assist driver education instructors in making alcohol education relevant and interesting to students. The guide is divided into four-hour, six-hour, and eight-hour mini-courses consisting of class sessions, each with two optional lesson plans, which have the same objectives but use different teaching methods. Each lesson plan has a: (1) "focus" section indicating the course objective; (2) "prep" section containing a list of instructor preparations; and (3) lesson outline with resources, step-by-step procedures, and evaluation methods. Following each lesson plan are master copies of lesson handouts which can be duplicated and distributed to students. A resources supplement is included with basic background information upon which the lessons are based. (Author/NRB)

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ED205868

DRINKING, DRIVING AND DECIDING

An Alcohol Module for Traffic Safety Education

Prepared Under the Supervision of

Robert J. Marum
Superintendent
Educational Service District No. 121
Seattle, Washington

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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This project was funded by the
Washington Traffic Safety Commission
Task No. 79-20.01.03-GØ-304-1A

May, 1980

CG 015359

SPI

Superintendent of Public Instruction

DR. FRANK B. BROUILLET · OLD CAPITOL BLDG., OLYMPIA, WASH. 98504

Dear Traffic Safety Educator:

It has grown more and more apparent that alcohol is the number one contributor to collisions and deaths on Washington State highways; thus, the need has become evident for a more comprehensive approach to this problem through driver education programs in the schools. As an initial step in this effort the Washington Traffic Safety Commission has awarded a grant to Educational Service District 121, in cooperation with the State Superintendent of Public Instruction, for the development of an alcohol-Traffic Safety Education module.

The module provides a variety of teaching approaches to the subject matter. Each instructor should feel free to use the method he/she deems most appropriate for each class. The content represents the minimum of information that should be disseminated in any Driver Education class.

The Traffic Safety Education staff acknowledges and appreciates the support of the Washington Traffic Safety Commission and Educational Service District 121 in the development of the alcohol-Traffic Safety Education resource curriculum. I am especially grateful to the many professionals who gave their time and expertise in the creation of this program. It is my opinion that the guide is a flexible, dynamic tool for the education of Washington teenagers in the nature of alcohol and driving.

Sincerely,

DIVISION OF INSTRUCTIONAL
AND PROFESSIONAL SERVICES

Gary Bloomfield

Dr. Gary Bloomfield
Program Manager
Traffic Safety Education

GJB:js

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ACKNOWLEDGEMENTS AND CREDITS

This module is the result of the time and energies of a wide variety of people over the years. Few of the ideas are new. They are mostly a re-arrangement of other people's past ideas. Although individual names do not appear here, we sincerely appreciate all of your ideas and efforts, without which this module would never have come to be.

The "Yellow Pages" resource supplement was the result of the time and effort of many people, and our sincere appreciation goes to:

Dr. Rogert Butz (SAFECO Insurance)
Nada Estes (University of Washington)
Bill Burkett (Washington State Liquor Control Board)
Sgt. Richard Carr (Washington State Patrol)
Marvin Ryser (Department of Licensing)

For their efforts in editing and producing this module, we are especially grateful to Carol Mooney, Andrea Conley, Shirley Myers and Maureen Fitzmahan.

We would also like to thank the Comprehensive Health Education Foundation for providing many of the materials included in this program.

Finally, our special thanks goes to a young high school artist, Mike Batt, whose creative talents make this module much nicer to read.

* *

This guide was written by Educational Service District 121 under a grant by the Washington Traffic Safety Commission for the Superintendent of Public Instruction, Dr. Frank B. Brouillet, Superintendent; Division of Instructional and Professional Services, Dr. Monica Schmidt, Assistant Superintendent; Program and Learning Resources Section, Jean Wieman, Section Director; Traffic Safety Education, Dr. Gary Bloomfield, Program Manager and Bill Hiblar, Supervisor.

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Art Opfer, ESD #105 - Yakima

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HOW TO USE THE MATERIALS

I. The Guide:

This instructor's guide is a set of instructional materials designed to assist you in making the alcohol education part of your course relevant and interesting to the students. It consists of three mini-courses and a resource supplement.

A. Mini-Courses

The guide is divided into four hour (green), six hour (blue) and eight hour (pink) mini-courses consisting of class sessions providing day by day activities for the teacher and the students. For each class session, except the first, there are two optional lesson plans. The two lesson plans work toward the same objectives only using different teaching methods.

* *
* Please feel free to mix and match the options to meet your individual *
* needs. You don't have to use only the "A" options or only the "B" *
* options. You may want to add your own ideas and materials. *
* *

Each lesson plan has a: Focus section which indicates the course objective being addressed; Prep section containing a list of anything the instructor needs to do prior to coming to class, and; Lesson Outline which identifies the resources needed, the step by step procedures and space to evaluate the results. The evaluation space can be used to make notes about how successfully that lesson worked for you. In addition, following each lesson plan are master copies of any handouts used during the lesson. These can be copied and distributed to the participants. The lessons are arranged in a recommended sequence. Again, however, feel free to rearrange the order of the lessons so that it fits your needs.

B. The Yellow Pages is the resources supplement containing the basic information upon which the lessons are based. Where appropriate, each lesson plan has been cross-referenced with the corresponding section and page number in The Yellow Pages so that if you want additional information before teaching the lesson, you can "find it fast in The Yellow Pages."

II. The Kit:

The lesson plans in the module call for a number of teaching materials. Rather than having each instructor develop his/her own, copies of these materials have been included in the kit. In each lesson plan the materials required are listed under the Lesson Outline section as "From the Kit."

You may have some additional ideas for using the kit materials. As with the lesson plans, please feel free to make use of the materials in the manner which best suits your teaching style and the needs of your students.

We hope you find this module and the materials useful and enjoyable.

DRINKING, DRIVING AND DECIDING

Goals and Objectives

OVERALL GOAL: To help students make responsible decisions about their use of alcohol, especially as it relates to driving.

OBJECTIVES:

1) The student will be able to identify the physical and behavioral effects of alcohol on the body, especially as it affects driving ability.

2) The student will be able to explain blood alcohol content, and predict the number of drinks it takes for him or her to become impaired and/or legally under the influence, and the factors which affect how alcohol influences him/her.

3) The student will be able to identify a variety of ways for coping with social pressures.

4) The student will be able to discriminate between responsible and irresponsible decisions related to alcohol.

5) The student will be able to identify the physical and behavioral effects of drugs, other than alcohol, on the body, especially as it affects driving ability.

6) The student will be able to identify his/her feelings and attitudes about the use of alcohol, and understand how they influence his/her decisions.

7) The student will be able to identify the laws which relate to alcohol and driving in his/her community and to estimate the probable cost of being arrested for DWI.

8) The student will be able to identify his/her own levels of risk and the impact that might have on driving behavior.

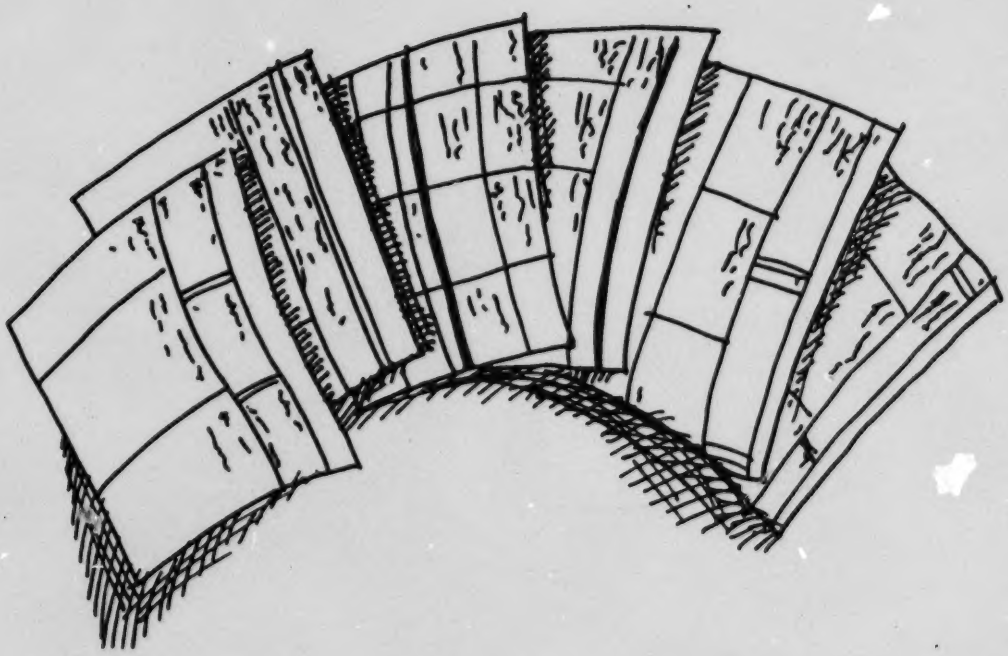
KIT CONTENTS

Myth Posters	1 set of 10
AAA Transparencies	1 set of 16
Alcohol Content Poster	1
Factors Posters	1 set of 10
Think Drink Wheels	5
Think Drink Cards	5 sets of 49
Decision Making Transparency	1
Risk Levels Transparency	1
Feel Wheels	5

BASIC FOUR-HOUR COURSE

SESSION 1

PRE/POST TEST



TEACHING METHODS: Pretest/Post-test

PAGE: 1

TOPIC: Alcohol Information

APPROXIMATE TIME: 30 minutes

focus

prep

Special Preparation Steps:

Prepare copies of the test and attitudes survey.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Alcohol & Traffic Safety Quiz, p. 2 Attitude Survey, p. 5 Read Yellow Pages Safety, p. 88-97 Physical Effects, p. 26-45	1. Distribute the papers to the students. 2. Ask students to individually complete the quiz and survey to the best of their abilities. This is not a graded test. After completion, options include: a) Correct the papers in class and discuss any questions which are still unclear. b) Collect the papers and wait until the last day to compare with the post test. c) Use the attitude survey for comparison at the end. NOTE: A post-test can be given by using the same forms on the last day.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

ALCOHOL AND TRAFFIC SAFETY QUIZ

1. In the state of Washington the blood alcohol level at which a driver is considered under the influence is: (a) 0.05 per cent (b) 0.08 per cent (c) 0.10 per cent (d) 0.15 per cent

2. In the state of Washington the chemical test for blood alcohol most frequently used is: (a) blood (b) saliva (c) breath (c) urine (e) blood pressure

3. Which of the following <u>least</u> affects blood alcohol level: (a) stomach content (b) weight (c) drinking experience (d) time elapsed

4. Studies suggest that driving performance may be impaired when blood alcohol concentrations are as low as: (a) 0.02 per cent (b) 0.04 per cent (c) 0.07 per cent (d) 0.10 per cent

5. Which of the following statements best describes an effect of alcohol on driver performance: (a) better concentration (b) increased hearing ability (c) increased attention span (d) reduced ability to react quickly

6. Approximately what percentage of fatal traffic accidents involve the use of alcohol: (a) 10 percent (b) 25 percent (c) 50 percent (d) 75 percent

7. Every day in the United States approximately how many people are killed in car accidents where alcohol was involved: (a) 25 (b) 50 (c) 75 (d) 200 (e) 250

8. The drinking driver may show which of the following: (a) overconfidence (b) risk taking desires (c) decreased judgement (d) slower reaction time (e) all of the above

9. When a non-drinking driver is compared with a drinking driver who has a .15 percent blood alcohol level, how much more likely is it that the drinking driver will become involved in a traffic accident: (a) no difference (b) 10 times greater (c) 25 times greater (d) no one knows

10. On the basis of present-day knowledge, the greatest single driver-related cause of fatal highway collisions is: (a) emotional upsets (b) inattention (c) fatigue (d) alcohol

11. Which of the following is first affected by drinking: (a) brake reaction time (b) color perception (c) the reasoning process (d) distance judgment

12. There is a law in Washington for persons possessing a driver's license which states that if they are arrested for a driving violation and are suspected of driving while intoxicated they have consented to a chemical test for the presence of alcohol. This law is called: (a) the Chemical Test Law (b) the Implied Consent Law (c) the Intoxication Law (d) the Driving While Intoxicated (DWI) Law

13. If a driver in the state of Washington is arrested and refuses to take a chemical test, this refusal will result in: (a) fine of $500 (b) courtroom trial (c) immediate suspension of one's driver's license (d) all of the above

14. The majority of the general public's response to current anti-drinking/driving efforts is: (a) they demand an effective program (b) they exhibit an attitude of tolerance toward drinking drivers (c) they want harsh penalties for guilty offenders (d) all of the above

15. Teenagers are more likely to have difficulty driving safely after drinking because of all the following, except: (a) driving is a new and complicated skill for them (b) they have had less experience with alcohol's effects (c) they often weigh less than adults (d) they spend more time driving than adults do

16. Alcohol use is associated with a significant number of which of the following: (a) pedestrian accidents (b) private airplane accidents (c) household accidents (d) all of the above

17. The most important factor in determining the effects of alcohol on the body is the: (a) percentage of alcohol in the bloodstream (b) person's ability to handle alcohol (c) kind of alcoholic beverages the person is drinking (d) age of the person

18. What kind of temporary eye problems can result from drinking alcohol? (a) reduced side vision (b) blurring (c) harder to see in the dark (d) all of the above

19. Alcohol and barbiturates ("reds"), when taken together, have what kind of effect on the body? (a) cancels each other (b) makes no difference (c) they make each other more potent (stronger) (d) increases the risk of becoming an alcoholic

20. A person who drives a car under the influence of marijuana would exhibit which of the following signs: (a) slower reaction time (b) loss of coordination, judgement (c) all of the above (d) none of the above

21. The average total cost of a driving while under the influence (DWI) conviction is: (a) about $200 plus one day in jail and alcohol information school (b) about $500 plus one day in jail plus alcohol information school (c) under $200 plus one day in jail and alcohol information school (d) over $500 plus one day in jail and alcohol information school

22. At my weight of _____pounds, I can drink up to _____drinks in an hour before becoming legally intoxicated.

True or False Questions	True	False
23. The action of alcohol on the nervous system resembles that of ether or other anesthetics.	____	____
24. By eating some solid food along with your drinking you will not become an intoxicated driver.	____	____
25. Judgment, vision, and reaction time in driver performance are impaired by even small amounts of alcohol.	____	____
26. Alcohol affects the latest learned and the most complicated skills first.	____	____
27. Alcohol is a stimulant.	____	____
28. Being convicted of DWI will cause an increase in your car insurance rates.	____	____

ATTITUDE SURVEY

Directions: Place a check (✓) on the blank to the right of each statement under the word STRONGLY AGREE, AGREE, UNSURE, DISAGREE, STRONGLY DISAGREE which most accurately indicates your feeling about the statement.

	STRONGLY AGREE	AGREE	UNSURE	DISAGREE	STRONGLY DISAGREE
1. Driving after drinking is a very dangerous practice.	____	____	____	____	____
2. It is sometimes fun to see how well you can drive after drinking.	____	____	____	____	____
3. You have to be crazy to ride with a driver who has had a few drinks.	____	____	____	____	____
4. Some drivers are more competent after a drink or two than other drivers who have not consumed any alcohol.	____	____	____	____	____
5. Since the odds are relatively small you'll get into an accident or get caught if you drive when drunk, it's all right to drive home.	____	____	____	____	____
6. Most people can actually drink quite a bit (3-5 drinks) and still drive just as safely as without drinking.	____	____	____	____	____
7. A drink or two helps people to drive better because it relaxes them.	____	____	____	____	____
8. Teenagers run greater risks drinking and then driving than do adults.	____	____	____	____	____
9. There is very little evidence that alcohol contributes to traffic accidents.	____	____	____	____	____
10. Persons convicted of drunken driving should be given a jail sentence.	____	____	____	____	____

ALCOHOL AND TRAFFIC SAFETY QUIZ

ANSWER KEY

1. (c) .10
2. (c) breath
3. (c) drinking experience
4. (a) .02 percent
5. (d) reduced ability to react quickly
6. (c) 50 percent
7. (c) 75
8. (e) all of the above
9. (c) 25 times greater
10. (d) alcohol
11. (c) the reasoning process
12. (b) the implied consent law
13. (c) immediate suspension of one's driver's license
14. (b) they exhibit an attitude of tolerance toward drinking drivers
15. (d) they spend more time driving than adults do
16. (d) all of the above
17. (a) percentage of alcohol in the bloodstream
18. (d) all of the above
19. (c) they make each other more potent (stronger)
20. (c) all of the above
21. (d) over $500 plus one day in jail and alcohol information school
22. Answers vary
23. True
24. False
25. True
26. True
27. False
28. True

SESSION 2

EFFECTS OF ALCOHOL

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO IDENTIFY THE PHYSICAL AND BEHAVIORAL EFFECTS OF ALCOHOL ON THE BODY, ESPECIALLY AS IT AFFECTS DRIVING ABILITY.

TEACHING METHODS: Lecture/Discussion (OPTION A) PAGE: 7

TOPIC: Effects of Alcohol APPROXIMATE TIME: 60 minutes

focus

The student will be able to identify the physical and behavioral effects of alcohol on the body, especially as it affects driving ability.

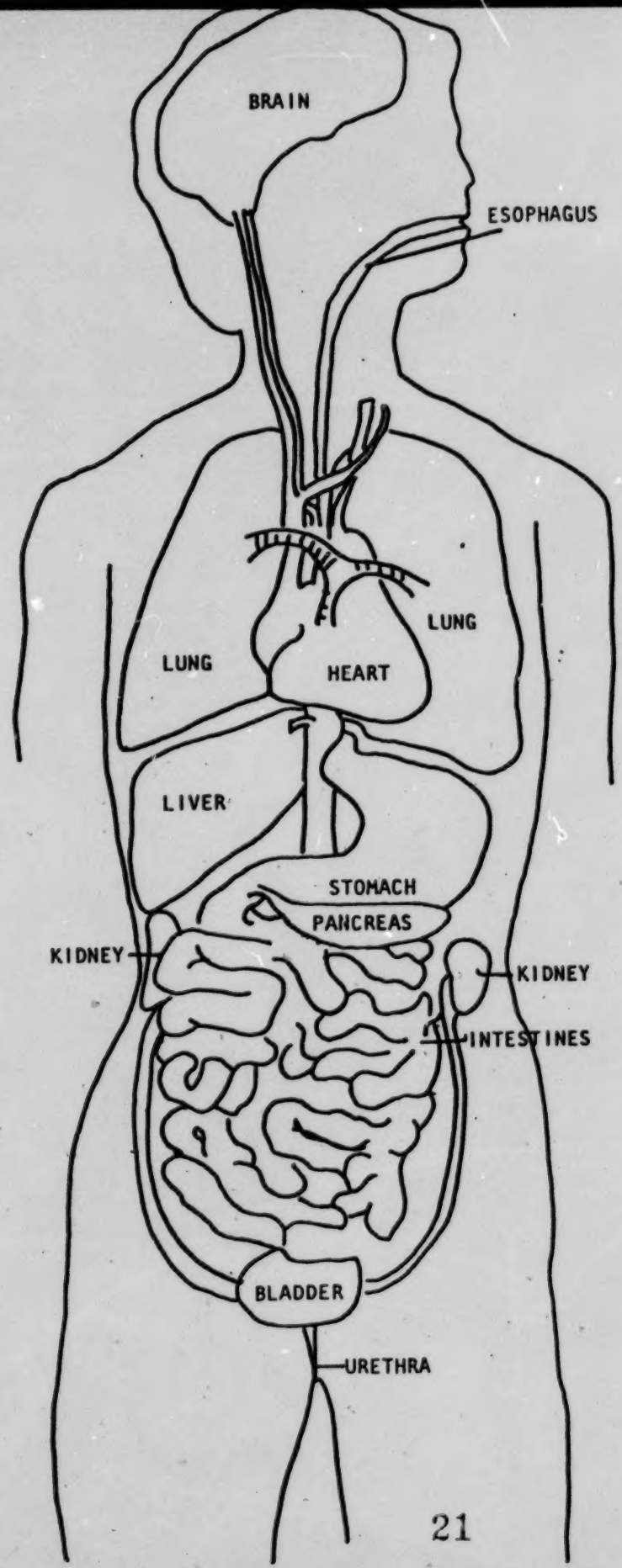
prep

Special Preparation Steps:

Obtain an overhead projector. Prepare copies of the body diagram.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Body Diagram, p. 8 Instructor Provides Overhead projector From the Kit: Myth Posters AAA Transparencies	1. Distribute copies of the body diagram to each student. 2. On the back of the sheet, ask each student to write one fact he or she knows about alcohol's effect on the body. 3. Ask students to take notes on the diagram during the lecture. 4. Lecture on the following topics: (Respective AAA transparency numbers are indicated) a. Processes of absorption, distribution, oxidation, and elimination. (#4,5) b. Path of alcohol in the body. (#5) c. Alcohol as a drug. d. Alcohol content of beer, wine and liquor. (#1) e. Short-term effects of alcohol on body organs and systems (e.g., liver, brain, heart, etc.). (#6,9) f. Long-term effects of alcohol on the body systems and organs. (#6) g. Interaction of alcohol with other drugs. h. Effect of alcohol on behavior and emotions. (#8)	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh! Wow!*
Read Yellow Pages Effects of Alcohol p. 26-45 Other Drugs p. 46-61	5. Allow occasional time for questions and answers during the presentation. 6. When finished, ask students to check the back of their diagrams to see if the statements they wrote were true. 7. Using the myth posters, conclude by discussing some of the common misconceptions about alcohol.	


BRAIN
ESOPHAGUS
LUNG
LUNG
HEART
LIVER
STOMACH
PANCREAS
KIDNEY
KIDNEY
INTESTINES
BLADDER
URETHRA

TEACHING METHODS: Film, lecture, discussion

OPTION B

PAGE: 9

TOPIC: Effects of Alcohol

APPROXIMATE TIME: 50 minutes

focus

The student will be able to identify the physical and behavioral effects of alcohol on the body, especially as it affects driving ability.

prep

Special Preparation Steps:

Reserve film, projector and screen.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Kit: AAA Transparencies Alcohol Content Poster Instructor Provides Film Projector Screen Read Yellow Pages Safety, p. 88-98 Effects, p. 26-45	NOTE: This activity requires a copy of the film, "Under the Influence". Copies have been placed in each ESD film library. Copies may also be available from the Washington State Patrol, local community alcohol centers or Southerby Productions P.O. Box 15403, Long Beach, California 98815. 1. Introduce the film by explaining that it attempts to demonstrate the effect alcohol has on driving ability. 2. Show the film. 3. Discuss the film using questions such as: a. Do you think it was believable? Why or why not? b. How do you think you would do in a similar test? c. How much can you drink before you get to an .08 or .10 BAC (Use BAC handout to verify.) d. How would you feel about riding in a car driven by the people in the film? e. How do you think people feel when they ride with you after you've been drinking? f. Why do people drive differently while under the influence of alcohol? g. How did you feel about: The man who wanted to "honk it on" The Black woman who thought she could "fool every one?" The blond man who was so "confident?" 4. As you discuss the film, be sure to cover the following topics. Continued on following page.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

TEACHING METHODS: OPTION B PAGE: 10

TOPIC: Effects of Alcohol APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
	Activity continued. 4. a. Path of alcohol through the body. b. Alcohol is a drug. c. Alcohol content of beer vs. wine vs. liquor. d. Short term effects of alcohol on body organs and systems (e.g., eyes, ears, brain, heart, liver) e. Long-term effects of alcohol on body organs and systems. f. Effects of alcohol on behavior and emotions.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

SESSION 3

BLOOD ALCOHOL CONTENT

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO EXPLAIN BLOOD ALCOHOL CONTENT AND ESTIMATE THE NUMBER OF DRINKS IT TAKES FOR HIM OR HER TO BECOME IMPAIRED AND/OR LEGALLY UNDER THE INFLUENCE, AND THE FACTORS WHICH AFFECT HOW ALCOHOL INFLUENCES HIM/HER.

TEACHING METHODS: Lecture and individual work

OPTION A

PAGE: 11

TOPIC: Blood Alcohol Content

APPROXIMATE TIME: 40 minutes

focus

The student will be able to explain blood alcohol content, and predict the number of drinks it takes for him or her to become impaired and/or legally under the influence, and the factors which affect how alcohol influences him/her.

prep

Special Preparation Steps:

Prepare copies of the Blood Alcohol Content handout.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Blood Alcohol Content handout, p. 13 From the Kit: Alcohol Content poster AAA Transparencies Factors posters Read Yellow Pages Safety, p. 88-98	1. Using the "Alcohol Content" poster, remind the students of the relative alcohol content of beer, wine and liquor. 2. Discuss Blood Alcohol Content (BAC) with the class, making sure to cover: (AAA Transparencies noted below) a. Rate of oxidation (#4,5) b. Effects of alcohol on the body at various concentrations (#3,13) c. Probability of driving accidents at various levels (#11, 12) 3. Using the factors posters, discuss the various factors which influence alcohol's effect on the body. Stress how, as a result of these factors, alcohol can affect two people very differently. (#7,8) 4. Ask the students to estimate how much alcohol it takes for them to reach the .10 level in two hours. Have them write it on the back of their papers. 5. Distribute the BAC handout, and help students determine how to read it. 6. Discuss the following Blood Alcohol Contents, and allow students to use their charts to determine approximately how much alcohol it takes for them to reach each level. Refer back to the factors posters. .05 - above which might be convicted of DWI--below which assumed not under the influence. .08 - legal intoxication in some states. .10 - legal intoxication in Washington Activity continued on following page	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh! Wow!*

TEACHING METHODS: OPTION A PAGE: 12

TOPIC: Blood Alcohol Content APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
	Activity continued. 7. Conclude by discussing the need to know your limits, particularly related to decisions about drinking and driving. 8. Have students check their estimates to see how close they came to guessing the number of drinks it takes for them to reach a BAC of .10.	

COMMENTS OR SUGGESTED CHANGES

Teacher evaluation of activity. Please circle:

1 2 3 4 5

Ugh! *Wow!*

BLOOD ALCOHOL CONTENT

To find your BAC:

First Find your weight in the left hand column. (For weights not shown, use the closest figures and then average.)

Second Select the column showing how many drinks you have had.

Note: One drink equals 12 ounces of beer, one shot of hard liquor (80 proof), or five ounces of wine.

Third Using the number of hours in which you consumed those drinks, find your BAC.

Figure 1

BAC CHART

After Hours	1 Drink				2 Drinks				3 Drinks				4 Drinks			
	4	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1
Weight (lbs.)																
80	–	–	–	.02	–	–	.05	.08	.07	.10	.10	.10	.12	.12	.15	.15
100	–	–	–	.02	–	–	.04	.06	.05	.07	.08	.09	.09	.10	.12	.13
120	–	–	–	.02	–	–	.03	.04	.03	.04	.05	.08	.06	.08	.09	.11
140	–	–	–	.01	–	–	.02	.04	.02	.03	.05	.06	.04	.06	.08	.09
160	–	–	–	.01	–	–	.02	.03	.01	.02	.04	.05	.03	.04	.06	.08
180	–	–	–	.01	–	–	.01	.03	–	.02	.03	.04	.02	.04	.05	.07
200	–	–	–	–	–	–	.01	.02	–	.01	.03	.04	.01	.03	.04	.06

After Hours	5 Drinks				6 Drinks				7 Drinks				8 Drinks			
	4	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1
Weight (lbs.)																
80	.17	.17	.19	.20	.19	.22	.22	.25	.26	.27	.27	.30	.29	.30	.32	.33
100	.13	.14	.16	.17	.16	.18	.19	.21	.20	.22	.23	.25	.24	.25	.27	.28
120	.09	.11	.13	.14	.13	.14	.16	.17	.15	.17	.19	.20	.19	.20	.22	.23
140	.07	.09	.10	.12	.10	.12	.13	.15	.13	.14	.16	.17	.15	.17	.18	.20
160	.06	.07	.09	.10	.08	.09	.11	.13	.10	.12	.13	.15	.13	.14	.16	.17
180	.04	.06	.07	.09	.06	.08	.09	.11	.09	.10	.12	.13	.11	.12	.14	.15
200	.03	.04	.06	.08	.05	.07	.08	.09	.07	.09	.10	.12	.09	.10	.12	.13

Numbers equal the percentage of alcohol in the blood. Dash (–) = a trace of alcohol.

Examples: A) A 180 pound person who drank five drinks in three hours would have a BAC of .06.

B) A 95 pound person who drank 3 drinks in two hours would have a BAC of .08 - .10.

REMEMBER: Your reaction to alcohol is affected by factors, such as:

1) What you've eaten
2) Your mood
3) The setting
4) Your drinking experience
5) Your personal chemistry
6) Other drugs you've taken

TEACHING METHODS: Lecture, group activity and discussion

PAGE: 14

TOPIC: Blood Alcohol Content (OPTION B)

APPROXIMATE TIME: 60 minutes

focus

The student will be able to explain blood alcohol content, and predict the number of drinks it takes for him or her to become impaired and/or legally under the influence, and the factors which affect how alcohol influences him/her.

prep

Special Preparation Steps:

Prepare copies of the activity worksheet and blood alcohol content handout.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Think Drink worksheet, p. 17 Blood Alcohol Content handout, p. 18 From the Kit: Think Drink wheels Think Drink Cards Factor Posters Instructor Provides Blackboard Chalk Read Yellow Pages Safety, p. 88-98	1. Ask how many people know what Blood Alcohol Content (BAC) means and have them share their definitions. Write the definitions on the board. 2. Use student's ideas to arrive at a correct definition of BAC. Explain how it increases and decreases based on consumption, absorption and oxidation. 3. Using the factors poster, review the factors which influence an individual's response to alcohol. Stress the fact that two people who drink the same amount of alcohol can have different BACs. Also note that two people can behave very differently with the same BAC. 4. Tell the students that they will be involved in an activity which will help demonstrate the concepts discussed above. Explain the Think/Drink activity instructions to them. (See following pages - Think/Drink Procedures.) 5. Conduct the activity. 6. After the activity is completed, regroup as a class for discussion. Students should refer to the records they kept during the activity to answer the following questions: a. What good things happened to you at the party? At what blood alcohol content did these occur? b. What bad things happened to you at the party? At what blood alcohol content did these occur?	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

Activity continued on following page.

TEACHING METHODS:

TOPIC: Blood Alcohol Content

OPTION B

APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
	Activity continued. 6. c. Why do you suppose there were different cards within each range of blood alcohol contents? d. How did body weight affect BACs? e. How did time impact BACs? f. If this situation were a real one, at what point would you decide to stop drinking? 7. Distribute BAC handout and help students become familiar with how it is used. 8. Discuss the following blood alcohol contents, and allow each person to use the chart to determine how many drinks it takes him/her to reach that level. Blood Alcohol Contents .05 - above which m'ght be convicted for DWI--below which assumed not under the influence. .08 - legal level of intoxication in some states. .10 - legal level of intoxication in Washington. 9. Conclude by discussing the need to be able to identify for yourself your own limits, particularly related to drinking and driving. Stress again the need to consider that each person's BAC is influenced by a variety of factors. NOTE: See the next lesson (p. 19) for ideas on how to expand this activity to meet the objective: The students will be able to identify a variety of ways for coping with social pressures.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

THINK/DRINK
ACTIVITY PROCEDURE

1. Divide the class into small groups of no more than six per group. Groups should represent a mix of sexes, body weights, ethnic backgrounds, and learning abilities. Informal circles on the floor or desks grouped together are recommended to encourage players to talk back and forth as they play so peer influence can occur.

2. Pass out one set of cards for each group and one BAC Wheel per group. Have each group separate their set of cards into piles face down according to the six different color decks, each indicating a different blood alcohol content. Give each person a Think/Drink worksheet and a pencil.

3. Ask participants to pretend it's Friday night and they've been invited to a friend's house for a party where drinks are being served. They've had a long hard week and are ready to relax.

   They are each free to decide for themselves (in turn) if they want to drink and how many drinks (if any) they want.

4. Explain and demonstrate the BAC Wheel and the six decks of cards in terms of what a person does when it is his/her turn--namely, he/she:

   a. decides whether or not to 'drink' and how much--from 0 to 4 drinks. Player may "pass" on any turn or drop out of the game and become an observer. Each turn represents 1/2 hour of time.

   b. operates the BAC Wheel according to his/her consumption decision, the game 'time' and his/her real body weight.

   c. takes the top card from the color-coded deck that contains the blood level range indicated for him/her by the BAC Wheel in step (b). Non-drinkers choose the top card from .00 pile.

   d. reads the information card aloud to the group and then records on the record sheet provided how much he/she drank and a brief summary of this result. A sample format is included on the following page.

   e. returns the card drawn to the bottom of the deck.

   f. allows the next person to follow suit, beginning with step 4(a), by passing on the BAC Wheel to him/her.

   Note: When a participant is told that he/she has "passed out," he/she retires to the sidelines to observe.

5. Instructor should announce the party will end, e.g., when two people have "passed out" or when one has "passed out" and the others have decided to stop drinking or within a given time period.

6. Tell the participants that there are no scores; they should be able to tell by their record of events whether they 'won' or 'lost'.

THINK/DRINK WORKSHEET

Time	No. of Drinks	BAC	Your Behavior (the effects)
1st half hour (1st turn)	This hour / Total		
Hour (2nd turn)	This hour / Total		
Hour and half (3rd turn)	This hour / Total		
Two hours (4th turn)	This hour / Total		

BLOOD ALCOHOL CONTENT

To find your BAC:

First Find your weight in the left hand column. (For weights not shown, use the closest figures and then average.)

Second Select the column showing how many drinks you have had.

Note: One drink equals 12 ounces of beer, one shot of hard liquor (80 proof), or five ounces of wine.

Third Using the number of hours in which you consumed those drinks, find your BAC.

Figure 1

BAC CHART

After Hours	1 Drink				2 Drinks				3 Drinks				4 Drinks			
	4	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1
Weight (lbs.)																
80	–	–	–	.02	–	–	.05	.08	.07	.10	.10	.10	.12	.12	.15	.15
100	–	–	–	.02	–	–	.04	.06	.05	.07	.08	.09	.09	.10	.12	.13
120	–	–	–	.02	–	–	.03	.04	.03	.04	.06	.08	.06	.08	.09	.11
140	–	–	–	.01	–	–	.02	.04	.02	.03	.05	.06	.04	.06	.08	.09
160	–	–	–	.01	–	–	.02	.03	.01	.02	.04	.05	.03	.04	.06	.08
180	–	–	–	.01	–	–	.01	.03	–	.02	.03	.04	.02	.04	.05	.07
200	–	–	–	–	–	–	.01	.02	–	.01	.03	.04	.01	.03	.04	.06

After Hours	5 Drinks				6 Drinks				7 Drinks				8 Drinks			
	4	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1
Weight (lbs.)																
80	.17	.17	.19	.20	.19	.22	.22	.25	.25	.27	.27	.30	.29	.30	.32	.33
100	.13	.14	.16	.17	.16	.18	.19	.21	.20	.22	.23	.25	.24	.25	.27	.28
120	.09	.11	.13	.14	.13	.14	.16	.17	.15	.17	.19	.20	.19	.20	.22	.23
140	.07	.09	.10	.12	.10	.12	.13	.15	.13	.14	.16	.17	.15	.17	.18	.20
160	.06	.07	.09	.10	.08	.09	.11	.13	.10	.12	.13	.15	.13	.14	.16	.17
180	.04	.06	.07	.09	.06	.08	.09	.11	.09	.10	.12	.13	.11	.12	.14	.15
200	.03	.04	.06	.08	.05	.07	.08	.09	.07	.09	.10	.12	.09	.10	.12	.13

Numbers equal the percentage of alcohol in the blood. Dash (–) = a trace of alcohol.

Examples: A) A 180 pound person who drank five drinks in three hours would have a BAC of .06.

B) A 95 pound person who drank 3 drinks in two hours would have a BAC of .08 - .10.

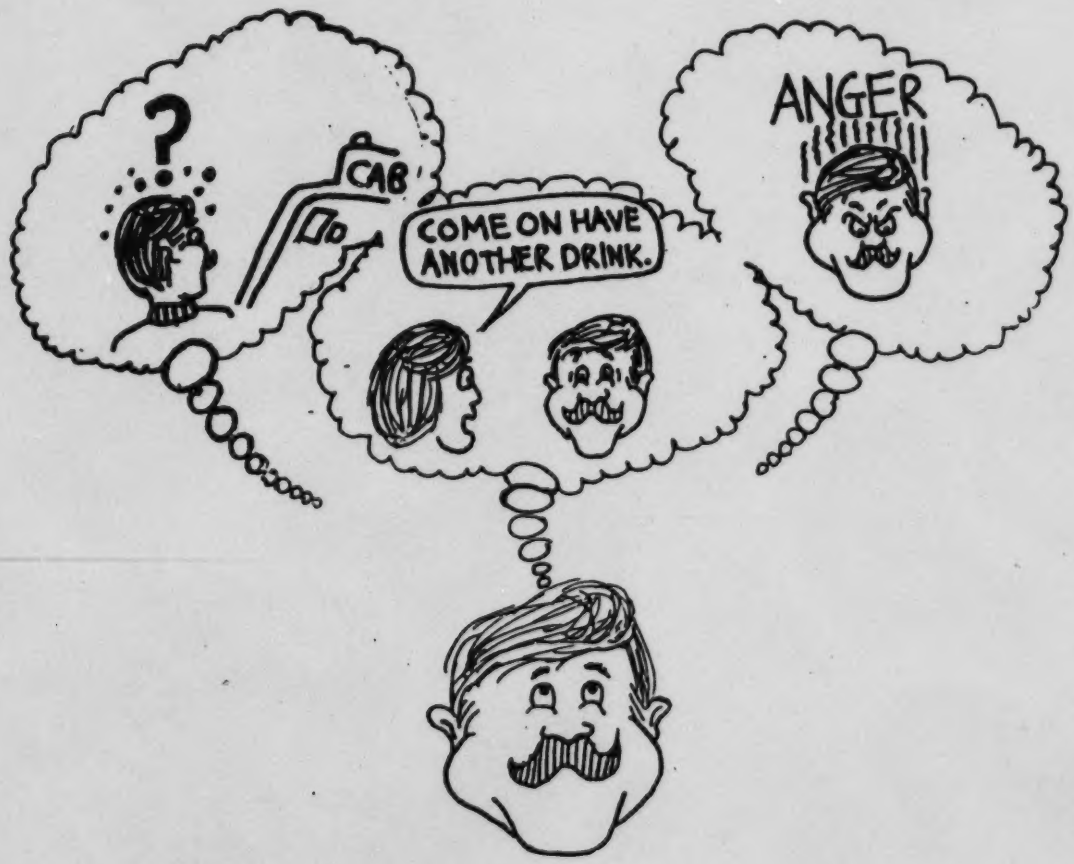
REMEMBER: Your reaction to alcohol is affected by factors, such as:

1) What you've eaten
2) Your mood
3) The setting
4) Your drinking experience
5) Your personal chemistry
6) Other drugs you've taken

SESSION 4

COPING

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO IDENTIFY A VARIETY OF WAYS FOR COPING WITH SOCIAL PRESSURES.



TEACHING METHODS: Discussion

OPTION A

PAGE: 19

TOPIC: Coping With Pressure

APPROXIMATE TIME: 50 minutes

focus

The student will be able to identify a variety of ways for coping with social pressures.

*This lesson is a continuation of the Think/Drink Game on p. 14.

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
Read Yellow Pages Decision Making p. 10-16	NOTE: This lesson consists of a discussion about peer pressure. It is intended to be used immediately after students have played the Think/Drink game. (see page 14. 1. Before starting the discussion, establish the following rules: a. No put downs. If people disagree with a comment which was made, have them do so in a positive manner. b. One person speaks at a time. No side conversations. c. You may choose to pass. If you don't want to share, that's okay. 2. Lead a discussion using any of the following questions: a. Were you pressured to drink? To not drink? b. Did you pressure anyone to drink? To not drink? If so, why? If not, why not? c. How did you respond to pressure to drink? Why? To not drink? Why? d. How did you respond to people who chose not to drink? To those who chose to drink? To those who chose to get drunk? e. What could you do if pressured to drink when you don't want to, or when you want to stop? What are your choices? f. What are the consequences of each choice listed in part (e) above? g. How did you feel about the person(s) who pressured you to drink? To not drink? h. What do your friends usually do when pressured to drink? Why?	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

Activity continued on following page.

TEACHING METHODS:

OPTION A

PAGE: 20

TOPIC: Coping With Pressure

APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

	RESOURCES	ACTIVITY	EVALUATION
lesson outline		Activity continued. During the discussion, the instructor should try to refrain from offering his or her opinion (i.e., the "right" answer). Allow students to learn from each other's comments. 3. To conclude the lesson, divide the class into groups (5-6 in a group), asking the groups to brainstorm responses to the following question: If you were planning a party where no alcohol was available, what would you plan to do? That is, what are some ways to have fun without booze? 4. Return to the large group and share ideas from the smaller groups, allowing people to respond to the different choices. Use the same discussion ground rules mentioned earlier.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

TEACHING METHODS: Discussion

OPTION B

PAGE: 21

TOPIC: Coping With Pressure

APPROXIMATE TIME: 30-50 minutes

focus

The student will be able to identify a variety of ways to cope with social pressures.

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
Instructor Provides Chalkboard Chalk Read Yellow Pages Decision Making p. 10-16	1. Ask students to list a variety of feelings which might be experienced in pressure situations related to alcohol. For example: embarrassment, anger, fear, nervous, etc. List these on the board. 2. Select one of the feelings identified and ask the students to further explain what it might mean to feel that way in a situation related to alcohol. 3. Continue the discussion of that feeling by asking, "What are some things that tell you when you are experiencing that feeling? What are some ways people behave under the influence of that emotion?" 4. To conclude your discussion of that feeling, brainstorm some possible ways to cope (deal) with it. Also, brainstorm the consequences of each suggested coping option. 5. Have students select other feelings from the list on the board and discuss the issues in steps 2, 3 and 4-- What does it mean to feel that way? What are indicators of that feeling? What are ways of coping with those feelings and pressures? 6. Conclude the discussion by thanking people for sharing their thoughts.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

SESSION 5

DECISION MAKING

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO DISCRIMINATE BETWEEN RESPONSIBLE AND IRRESPONSIBLE DECISIONS RELATED TO ALCOHOL.

TEACHING METHODS: Individual worksheets, group discussion

OPTION A

PAGE: 22

TOPIC: Responsible Decisions

APPROXIMATE TIME: 45 minutes

focus

The student will be able to discriminate between responsible and irresponsible decisions related to alcohol.

prep

Special Preparation Steps:

Prepare copies of the handout. Obtain an overhead projector.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Scenarios, p. 25 From the Kit: Decision-Making Transparency Instructor Provides Overhead projector Read Yellow Pages Decision Making, p. 10-16	NOTE: In any activity where individuals are asked to share how they feel, they have the right to choose not to share. In turn, the group and instructor must not pressure anyone to share. Remind the group of this before beginning the lesson. 1. Ask students to form groups of five or six people. Encourage students to sit with people they usually do not sit with. 2. Distribute the handout to each person. 3. Working alone, have students read the first situation (#1) and list on the back of their papers as many alternatives as they can think of. Encourage creativity. Inform the students that what they write may be shared later on. 4. After some time has passed, ask students to circle the one behavior they would choose for themselves. 5. Within their groups, allow students to share their lists of options and the one they chose for themselves and why. After hearing each other's ideas, students may want to change their decisions. 6. Discuss the fact that as a group they were able to identify more choices than any one individual was able to do. 7. Returning to the large group, use the transparency to present the decision-making model. Elaborate on each of the nine steps. Encourage students to comment, and identify if they used any of the steps in making their decisions.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

Activity continued on following page.

TEACHING METHODS:

OPTION A

PAGE: 23

TOPIC: Responsible Decisions

APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
	Activity continued. 8. Again working alone, ask students to read the second situation (#2). Using the decision-making model, ask them to again select the option they would choose. 9. As a large group, ask for one volunteer to share his/her choice. Ask the class to identify, in a positive way, the consequences of that choice. Ask for additional volunteers to share, and ask the class to identify the consequences of each choice. 10. When there are no more volunteers, allow time for students to change their decisions if appropriate. 11. Using situation #3, ask the large group to suggest orally, possible choices and the consequences of each choice. Follow this up with the following question: What <u>should</u> be done in this situation? (Should implies what the law, the community, parents, church, etc. say is "right".) Allow discussion. An additional question might be: "Why do individuals <u>choose</u> to behave in a way which society, family, church, etc. say is wrong?" Refer to step five of the model. 12. To conclude the discussion: a. Review the decision-making model. Activity continued on following page.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

TEACHING METHODS:

TOPIC: Responsible Decisions

OPTION A

PAGE: 24

APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
	Activity continued. 12. b. Point out that for any problem there are always many choices, and for each choice, many consequences. c. Emphasize that what is "right" for one person is not necessarily "right" for another, but we are all obligated to act in the best interest of society as a whole.	

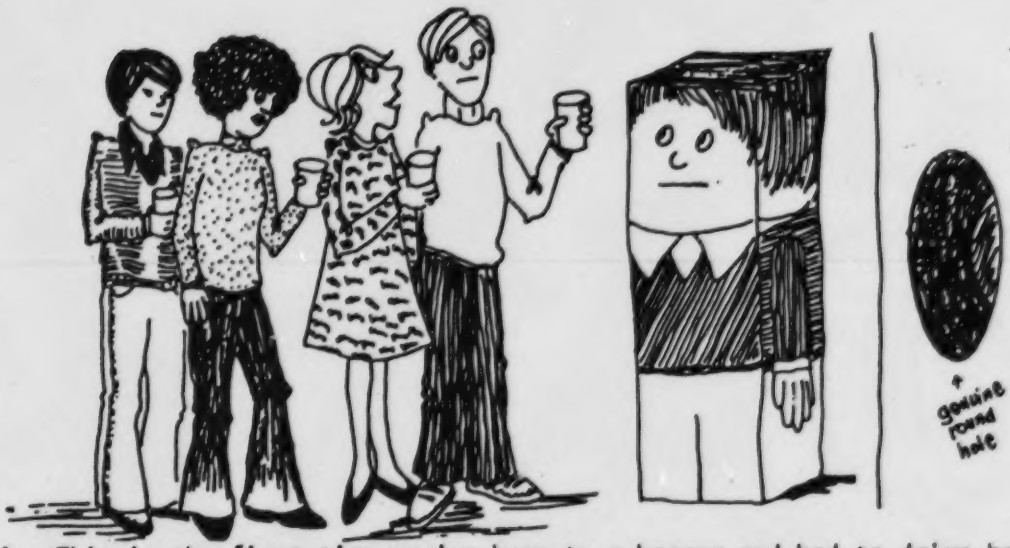
COMMENTS OR SUGGESTED CHANGES

Teacher evaluation of activity. Please circle:

1 2 3 4 5

Ugh! *Wow!*

SCENARIOS



1. This is the first time you've been to a kegger and had to drive home. You feel a little funny and different as you drive your parents new car. You don't want to stop driving because you really want to show off your new license. On the other hand, you don't want to get in an accident or lose your license because of a DWI. If you can find a good excuse, you are willing to pull over, lock the car and hitch, but you're too embarrassed to ask someone else to drive.

   What could you do?

   What would you do?

2. You met your best friend, Pat, at your neighbor's house to watch a show on T.V. During the show, Pat had four or five beers. It is time to leave, but Pat is obviously to drunk to drive. He lives two miles away. Your friend's parents will be home in half an hour.

   What could you do?

   What would you do?

3. You drove to the party and you'll have to drive home. All your friends are there and they are having a great time drinking and smoking dope. Usually you would join them. Someone offered you a beer and a couple of your friends are watching. You hate to look like a "NERD," but you do have to drive home.

   What could you do?

   What would you do?

TEACHING METHODS: Small and large group discussion

OPTION B

PAGE: 26

TOPIC: Responsible Decisions

APPROXIMATE TIME: 50 minutes

focus

The student will be able to discriminate between responsible and irresponsible decisions related to alcohol.

prep

Special Preparation Steps:

Prepare copies of the worksheets (one for half of the class and one for the other half).

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: The Older Brother, p.28 The Kegger, p.30 Instructor Provides Blackboard Chalk Dictionary Read Yellow Pages Decision-Making p. 10-16	NOTE: In any activity where individuals are asked to share how they feel, they have the right to choose not to share. In turn, the group and instructor must not pressure anyone to share. Remind the group of this before beginning the lesson. 1. Ask the class to define the words "responsible" and "irresponsible." You may want to write a few key words on the board. Read a definition for each word from the dictionary. 2. Generate a list of reasons "Why People Drink" and "Why People Don't Drink" by asking the class for ideas. Write these on the board. Add other reasons you feel should be included. 3. For each reason listed on the board, poll the class on whether they think it is a responsible or irresponsible reason. Allow discussion. 4. Divide the class in half. Distribute the "Older Brother" worksheet to one half, and the "Kegger" worksheet to the other half. Have the students complete their respective worksheets individually. 5. Divide each half of the class into groups of four or five (by worksheet) and ask each small group to try to come to a consensus on each question on the sheet. 6. Return to the large group and ask for each small group to report on:	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

Activity continued on following page.

TEACHING METHODS:

OPTION B

PAGE: 27

TOPIC: Responsible Decisions

APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
	Activity continued. 6. a. Whether or not they were able to agree. b. If they agreed, what was their decision? c. If they did not agree, why? 7. To conclude the activity, discuss with the group the following concepts: a. People don't always agree on what is a responsible decision regarding alcohol. b. How a person feels about alcohol will influence his/her decisions about drinking. c. Some factors which must be considered in order to make a responsible decision about alcohol include: • Your own safety and well-being • The safety and well-being of others • The law • Your religion • Your job • Social norms • Etc.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

Read the following situation. Circle the appropriate number which indicates what you think about the decision described. Then, explain briefly why you answered as you did.

THE OLDER BROTHER

1. Mark, who is 16, asks his older brother, Rick, who is 22, to buy a case of beer for him.

Responsible 1 2 3 4 Irresponsible

Why?

2. Rick agrees to buy the beer on the condition that Mark doesn't drive after drinking.

Responsible 1 2 3 4 Irresponsible

Why?

3. Mark promises not to drive.

Responsible 1 2 3 4 Irresponsible

Why?

4. Rick buys the beer.

Responsible 1 2 3 4 Irresponsible

Why?

5. Mark shares the beer with his two friends at a party.

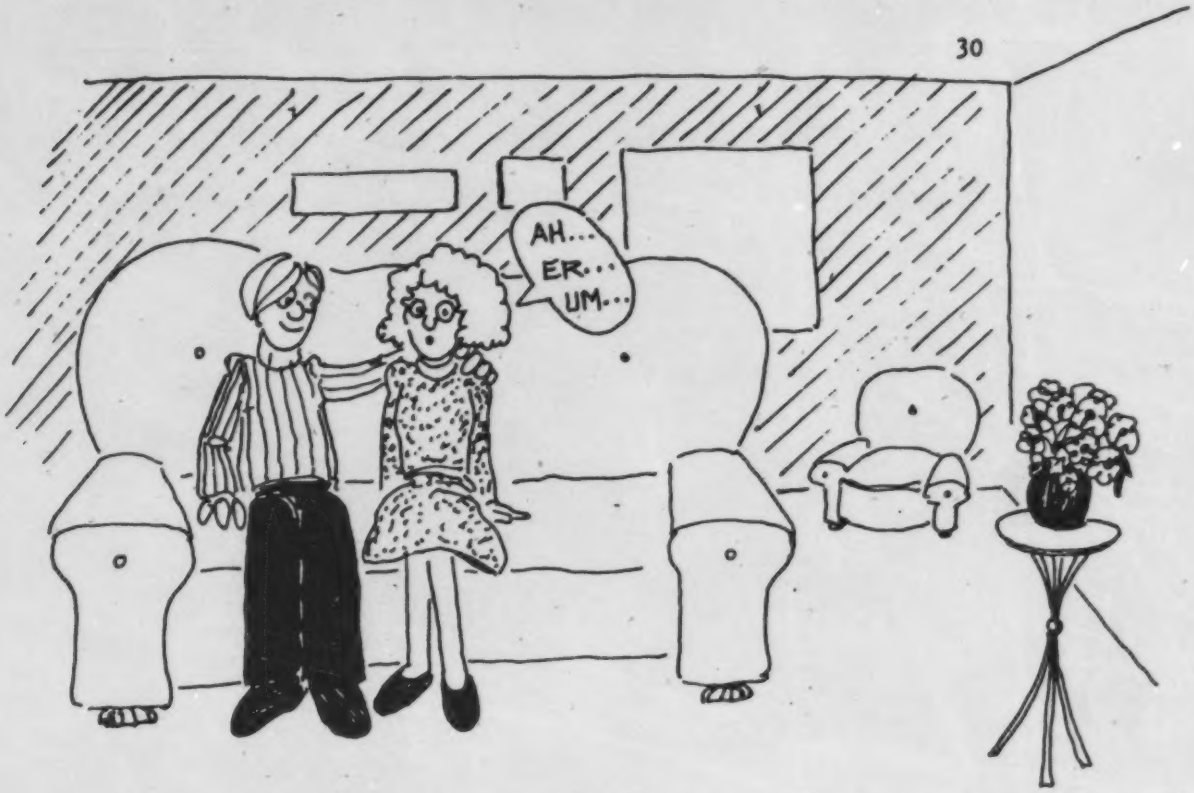
Responsible _____ Irresponsible
1 2 3 4

Why?

6. Mark has had three beers and doesn't want to break his promise, so he lets his friend drive. His friend has had five beers and is Mark's size.

Responsible _____ Irresponsible
1 2 3 4

Why?



Read the following situation. Circle the appropriate number which indicates what you think about the decision described. Explain why you answered as you did.

THE KEGGER

1. Rick and Heather, both 16, decide to go to a Friday evening kegger.

Responsible 1 2 3 4 Irresponsible

Why?

2. Rick drinks beer, while Heather has coke.

Rick
Responsible 1 2 3 4 Irresponsible

Heather
Responsible 1 2 3 4 Irresponsible

Why?

3. Feeling that Rick has had a little too much, Heather offers to drive him home.

Responsible 1 2 3 4 Irresponsible

Why?

4. Not wanting anyone else to drive his car, Rick refuses.

Responsible 1 2 3 4 Irresponsible

Why?

5. Heather, not wanting to make Rick angry, gives in and lets him drive.

Responsible 1 2 3 4 Irresponsible

Why?

SIX-HOUR COURSE

IF YOU HAVE UP TO SIX HOURS, THE FOLLOWING LESSONS CAN BE ADDED TO THE BASIC COURSE.

SESSION 6

OTHER DRUGS

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO IDENTIFY THE PHYSICAL AND BEHAVIORAL EFFECTS OF DRUGS (OTHER THAN ALCOHOL) ON THE BODY, ESPECIALLY AS IT AFFECTS DRIVING ABILITY.

TEACHING METHODS: Individual work and discussion

OPTION A

PAGE: 32

TOPIC: Alcohol and Other Drugs

APPROXIMATE TIME: 60-90 minutes

focus

The student will be able to identify the physical and behavioral effects of drugs (other than alcohol) on the body, especially as it effects driving ability.

prep

Special Preparation Steps:

Duplicate copies of the Drug Knowledge Inventory, "Marijuana vs. Alcohol" and "Dangerous Mixes".

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Drug Knowledge Inventory, p. 32 Answer Key, p. 38 "Dangerous Mixes" handout, p. 39 "Marijuana vs. Alcohol" handout, p.40 Read Yellow Pages Other Drugs, p. 46-61	1. Introduce by saying that most of us feel we know a lot about drugs, but we might be surprised at how little we may know. Today's activity gives us the chance to test our knowledge about drugs. 2. Distribute copies of the Drug Knowledge Inventory to all students. 3. Explain that students will not be graded on this activity. 4. Ask students to fill out the Inventory to the best of their abilities. 5. Correct the inventories in class using the answer key. 7. Review the inventory with the students and correct any misinformation. Place special attention on how drugs effect driving performance, using the appropriate handout. 8. Conclude by pointing out that correct information is only one part of a responsible decision.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

DRUG KNOWLEDGE INVENTORY

This is a teaching test to help you and your teacher assess your drug education needs.

Your score on this test will not be used for the purpose of giving you a grade. By answering the test to the best of your ability, your teacher will be able to determine what information you already know and areas in which you need more information.

Directions: Please circle the one most appropriate letter for the items below. Do not leave items blank.

Dependence

1. Drugs which create physical dependence will cause:

   a. emotional and physical craving and a need to increase dosage.
   b. emotional and physical craving, but no need to increase dosage.
   c. emotional craving, but no physical craving or need to increase dosage.
   d. regular use, but no craving or need to increase dosage.

2. Drugs which create psychological dependence will cause:

   a. emotional and physical craving and a need to increase dosage.
   b. emotional and physical craving, but no need to increase dosage.
   c. emotional craving, but not physical craving or need to increase dosage.
   d. regular use, but no craving or need to increase dosage.

Drug Use Patterns

3. The strongest and most serious drug dependency from a medical standpoint is:

   a. heroin
   b. alcohol
   c. barbiturates
   d. nicotine

4. In the United States today the most common drug of dependence is:

   a. nicotine
   b. heroin
   c. alcohol
   d. tranquilizers

5. Drug abuse is a problem which is found most often in:

   a. college communities
   b. high schools
   c. city slum areas
   d. middle class suburbs

Barbiturates

6. Which terms refer to barbiturates?

   a. Amytal, Nembutal, Seconal
   b. Benzedrine, Dexedrine, Methadrine
   c. Librium, Miltown, Thorazine
   d. Codeine, Heroin, Morphine

7. The most important medical use of barbiturates is:

   a. to bring about sleep.
   b. to reduce tension.
   c. to relieve pain.
   d. in research.

8. Which one is the most likely description of a person who has taken more than a prescribed amount of a barbiturate?

   a. giggling, daydreaming
   b. even-tempered, withdrawn
   c. drowsy, slurred speech
   d. restless, perspiring

Narcotics

9. Which terms refer to narcotic drugs?

   a. Amytal, Nembutal, Seconal
   b. Benzedrine, Dexedrine, Methedrine
   c. Codeine, Heroin, Morphine
   d. all of the above

10. Which of the following terms refers to a synthetic narcotic?

   a. methadone
   b. opium
   c. heroin
   d. morphine

11. The most important medical use of narcotic drugs is:

   a. as an anesthetic
   b. to relieve pain
   c. to reduce tension
   d. in research

12. Which one is the most likely description of a person who has taken more than a prescribed amount of a narcotic drug?

   a. excited and hyperactive
   b. hostile and aggressive
   c. nervous and fearful
   d. quiet and inactive

13. What happens when an unborn baby's mother is a narcotic opiate addict?

    a. The baby is an opiate addict at birth.
    b. The baby is likely to be physically deformed.
    c. The baby is likely to be mentally retarded.
    d. The baby will be unaffected.

Tranquilizers

14. Which terms refer to tranquilizers?

    a. Amytal, Nembutal, Seconal
    b. Benzedrine, Dexedrine, Methedrine
    c. Codeine, Heroin, Morphine
    d. Librium, Miltown, Thorazine

15. The most important medical use of tranquilizers is:

    a. to bring about sleep
    b. to reduce tension
    c. to relieve pain
    d. to increase alertness

16. How great a problem is tranquilizer use in the United States?

    a. Number one prescribed drug
    b. Number two prescribed drug
    c. Number three prescribed drug
    d. Number five prescribed drug

Amphetamines

17. Which of the following terms refer to amphetamines?

    a. Amytal, Nembutal, Seconal
    b. Benzedrine, Dexedrine, Methedrine
    c. Librium, Miltown, Thorazine
    d. Codeine, Heroin, Morphine

18. The normal medical use of amphetamines is in:

    a. relief from drowsiness and depression
    b. relief from fear and anxiety
    c. relief from restlessness and excitability
    d. research on human behavior

19. Which is the most likely description of a person who has taken more than a prescribed dose of an amphetamine?

    a. Giggling, daydreaming, enlarged pupils
    b. Inactive, quiet, small pupils
    c. Poor balance, slurred speech, short temper
    d. Restless, perspiring, enlarged pupils

Hallucinogens

20. Which terms refer to hallucinogens?

    a. Cocaine, Novocaine
    b. Dilaudid, paregoric
    c. Luminal, Tuinal
    d. Mescaline, psylocybin

21. The most important medical use of hallucinogens is in:

    a. overcoming depression
    b. treatment of mental and emotional problems
    c. controlling fear and anxiety
    d. research on human behavior

22. Which of the following is intensified by taking hallucinogens?

    a. Concentration
    b. Imagination
    c. Judgment
    d. Motivation

Marijuana

23. The most important medical use of marijuana is:

    a. as an appetite enhancer and in the treatment of glaucoma
    b. for use as a relaxant and for treatment of asthma
    c. as a minor tranquilizer
    d. to relieve nausea in cancer patients undergoing chemotherapy.

24. Effects of heavy marijuana use can include:

    a. strong aggression and violence
    b. red eyes, lack of ambition, nausea
    c. infections, permanent loss of coordination
    d. none of the above

25. Which are the most probable immediate effects of marijuana use?

    a. Daydreaming, altered sense of time
    b. Restlessness, quick temper
    c. Inactivity, small pupils
    d. Slurred speech, poor balance

26. In Washington State the possession of small amounts of marijuana is considered a:

    a. felony (fine of $1,000 - $10,000 or one or more years in prison, or both)
    b. misdemeanor (fine of up to $500, or up to 90 days in jail, or both)
    c. legal
    d. none of the above

Smoking (Nicotine)

27. Cigarettes contain nicotine. Nicotine is a drug which produces:

    a. psychological dependence
    b. physical dependence
    c. both a and b
    d. non of the above

28. The number of people smoking cigarettes in the U.S. has:

    a. gone down since the surgeon general's report
    b. remained the same since the surgeon general's report
    c. gone up, especially in young women, since the surgeon general's report
    d. gone down, especially in women, since the surgeon general's report

Directions: Please circle True or False for the items below.

True or False 29. Caffeine is a drug found in tea, coffee and coke.

True or False 30. PCP is a downer (depressant drug).

True or False 31. Two downer drugs working together produce an effect known as potentiation.

True or False 32. "Good" drugs (prescription drugs) annually kill over 30,000 Americans.

True or False 33. "Adult Dose" is based on a healthy 25-year-old female.

True or False 34. Aspirin is the number one way people commit suicide.

True or False 35. 10% of the American population (people over 65) use 25% of the prescription drugs sold in the U.S.

KNOWLEDGE INVENTORY ANSWER KEY

1. A
2. B
3. B
4. C
5. D
6. A
7. A
8. C
9. C
10. A
11. B
12. D
13. A
14. D
15. B
16. A
17. B
18. A
19. D
20. D
21. D
22. B
23. D
24. B
25. A
26. B
27. C
28. C
29. T
30. F
31. T
32. T
33. F
34. F
35. T

DANGEROUS MIXES

WARNING The effects listed here can be altered dramatically by such factors as past drinking habits, the amount of alcohol already consumed, as well as chronic ailments.

ANTIHISTAMINES (including many cold remedies and allergy medicines)	= Increased central-nervous-system depression, e.g., drowsiness
ASPIRIN	= Stomach and intestine bleeding.
NARCOTICS (e.g. Codeine, heroin)	= Increased central-nervous-system depression with acute intoxication. Possible respiratory arrest.
NON-NARCOTIC PAINKILLERS (e.g. Tylenol)	= Stomach and intestine irritation and possible bleeding.
ANTABUSE (an antialcoholism medication)	= Flushing, hyperventilation, vomiting, drowsiness.
HIGH BLOOD PRESSURE MEDICATIONS	= Increased effect. In some cases, blood pressure can be lowered to dangerous levels.
ORAL ANTICOAGULANTS	= Increased anticoagulant effect initially; decreased effect in chronic drinkers.
ORAL ANTIDIABETIC DRUGS	= A reaction similar to the interaction of Antabuse and alcohol. Decreased antidiabetic effect.
ANTIBIOTICS	= A reaction similar to the interaction of Antabuse and alcohol.
SEDATIVES AND TRANQUILIZERS (e.g. Valium, Librium, Miltown)	= Increased central-nervous-system depression.

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SOURCE:

The New York Times Magazine, August 6, 1978.

40

Marijuana vs. Alcohol

. As people take sides in the debate over which substance is worse for you—marijuana or alcohol—it is easy to lose sight of another question. Does anyone benefit from either of these substances? Below is a chart comparing the two drugs, containing the most recent information on marijuana. It was presented in the Sixth Annual Report to the U.S. Congress on Marijuana and Health *from the Secretary of Health, Education and Welfare. Read the evidence and decide for yourself.*

Physical Effects

M not proven or ruled out. Reversible and dose-related changes in brain waves occur. Also tachycardia, poor peripheral vision, respiratory irritation, impairment of pulmonary function, lowering of testosterone levels, possible chromosome changes, possible impairment of immunity to disease

A substantiated at high doses. Impairment of senses, memory, coordination, liver function, circulation, digestion, reaction time, appetite, etc.

Effects on Behavior (small doses)

M sensitivity increased, talkative, silly

A senses less acute, talkative, silly, less inhibited

Effects on Behavior (large doses)

M confusion, impairment of memory,drowsiness, withdrawn behavior

A sleepiness, vomiting, unconsciousness, coma

Physical Addiction

M none

A 1 in 10 drinkers becomes an alcoholic

Lethal dose

M not attainable

A possible. Only .5% alcohol in blood is fatal

Driving Ability

M definite impairment very similar to effects of alcohol. The number of users who drive while intoxicated is rising rapidly. Effects may outlast the intoxication by several hours.

A impaired reaction time, judgment, coordination, but effects diminish with removal of alcohol from blood

Tolerance

M can develop

A does develop

M=Marijuana A=Alcohol

72

Withdrawal Sickness

M has occurred involving irritability, restlessness, decreased appetite, difficult sleeping, tremors, nausea, vomiting and diarrhea

A DT's, shakes, tachycardia, anxiety, hallucinations, delusions, seizures

Flashbacks (recurrence of intoxication without ingesting more of the drug)

M have occurred in both heavy and infrequent users

A none

Psychological Changes

M usually lessens aggressiveness, slows personality development, may be used as coping agent, heavily influenced by set and setting, may cause acute anxiety, cloud mental processes, cause disorientation

A may increase aggressiveness, slow personality development, be used as coping agent, replace previously important things in drinker's life

Lead to Other Drugs

M not physically. May happen by association with those who sell other drugs

A not physically. Users seldom seek other drugs psychologically

Potentiation

M unknown effect with other drugs

A may be highly dangerous if used with other drugs

Detection in Body

M difficult but long-lasting. Can be detected up to 7-14 days. No roadside test for driving under the influence

A easily detected by breath test which can be done at roadside

Signs of Dependence

M lack of ambition or goals, loss of energy, confused thinking

A same as marijuana plus increasing the amount used, memory blackouts, drinking in the morning and alone, change in personality

Incidence of Use 41

M 36 million have tried it. One-eighth of the youth surveyed used it in a given month

A 100 million users. One-third of the youth surveyed used it in a given month

Breakdown in Body

M complex and long storage in body, may block the breakdown of other drugs

A simple, rapid breakdown to carbon dioxide and water

Loss of Motivation

M possible

A possible

Debilitation

M not particularly

A may be very debilitating

Effect on Pregnant Woman's Fetus

M unknown

A Fetal Alcohol Syndrome, prematurity, stillbirth

Purity of Drug

M unknown, often adulterated or mixed with other drugs like PCP. Amount of THC varies in each batch

A dose regulated and pure in purchased product but may be mixed improperly by buyer

Organizations to Help Abusers and their Families

M Potsmokers Anonymous

A Alcoholics Anonymous, Alateen, Alanon, Community Concern for Alcohol, etc.

Medical Uses

M May prove useful in treatment of glaucoma when used in drops into the eyes, may prove helpful in treating nausea suffered by those receiving chemotherapy

A none today

Value to Society as a Whole

You decide

M=Marijuana A=Alcohol

TEACHING METHODS: Large group discussion/reading

OPTION B

PAGE: 42

TOPIC: Drugs Other Than Alcohol

APPROXIMATE TIME: 30-40 minutes

focus

The student will be able to identify the physical and behavioral effects of drugs, other than alcohol, on the body, especially as it relates to driving.

prep

Special Preparation Steps:

Prepare copies of the handout.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Drugs and Driving, p. 43 Read Yellow Pages Other Drugs, p. 46-61	1. On the board write the following categories: Marijuana, Tranquilizers/ Sedative Hypnotics, stimulants, hallucinogens, over-the-counter drugs 2. Under each category, have students brainstorm how taking that kind of drug might affect driving ability. 3. After the lists have been exhausted, distribute the handout "Drugs and Driving". 4. Using the handout as a focus, discuss each category clarifying any questions or misconceptions.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh! Wow!*

DRUGS AND DRIVING

Millions of people take drugs every day and don't realize these drugs can affect their driving. Alcohol, tranquilizers, marijuana--or any other mind-altering drug--can affect the mental and physical (psychomotor) skills needed to drive.

Different people's driving skills can be affected differently by the same drug. The driver's weight and emotional state, the amount of the drug and when it was taken--all influence the driver's ability to size up an emergency situation or to judge speed, for instance.

Mixing drugs can be doubly dangerous because each drug adds to the impact of the other. This is especially true if one of the drugs is alcohol.

Even some over-the-counter medicines can affect driving skills. The hallucinogens and the highly unpredictable PCP can also interfere with driving.

ALCOHOL

Each year alcohol, a depressant drug that affects coordination, judgment, perception, and emotional state, is responsible for about 28,000, or half, of all American highway deaths.

Studies with driving simulators show that drunk or nearly drunk subjects overestimate their abilities and make riskier choices behind the wheel. Some studies indicate that women's driving performance may be affected more quickly and by less alcohol than men's. (This is probably because the average woman is smaller in size, which makes her less tolerant than the average man to the same amount of alcohol.)

Alcohol increases the depressant effects of tranquilizers and barbiturates. Mixing these drugs, on or off the road, can be extremely hazardous.

MARIJUANA

Although marijuana appears to have more effect on the senses and perception than on the strictly physical aspects of driving, even typical social doses affect driving skills.

Driving simulator studies show that subjects under marijauna's influence are more likely to miss important visual cues, to have narrower fields of vision, and to be slightly less coordinated. They also have more difficulty "tracking," or staying in their lane, and they don't respond as quickly to sound. Other studies have pointed out that marijuana can affect judgment and concentration.

Some studies show, however, that subjects on marijuana tend to take fewer risks, and that regular users tend to show less impairment in driving skills than inexperienced users.

Many people think that smoking marijuana and driving is safer than drinking and driving. But driving is safest without drugs.

TRANQUILIZERS AND OTHER SEDATIVE-HYPNOTICS

Tranquilizers are central nervous system depressants which help relieve tension and anxiety. Since the different tranquilizers have similar effects on driving skills, only diazepam (Valium), the most commonly prescribed, is considered here.

Studies show that therapeutic doses of diazepam may slightly impair psychomotor skills by slowing reaction time, interfering with eye-hand coordination. and affecting the speed at which the brain processes sensory information. Driving simulator tests show that persons on diazepam are somewhat less likely than others to check "roadway" conditions. On the other hand, tranquilizers may enhance the driving skills of some anxious people, for whom they are prescribed because of their calming effect.

Flurazepam (Dalmane) is the most widely prescribed sleeping pill. Studies show that it accumulates in the body and that its residual effects impair driving skills. When test subjects drank alcohol after only a single night's dose of Flurazepam, their skills became highly impaired. Elderly people need to be especially careful when driving the day after taking this drug.

The other sedative-hypnotic drugs, including barbiturates, are powerful depressant that calm people down or help them sleep. Sleepy or oversedated drivers, however, are not good drivers. Driving simulator tests show that doses of secobarbital (Seconal) slowed reaction times and made it harder for drivers to stay in lane.

Mixing sedative-hypnotics with alcohol, also a depressant, can be extremely dangerous. Drinks plus "downers" make bad traveling companions.

STIMULANTS

Amphetamines, cocaine, and caffeine stimulate the central nervous system. Modest amounts of these drugs usually make people feel more alert.

In fact, studies point out that small doses of amphetamines, given to subjects for a limited period of time, improve performance of most driving skills. However, these subjects tend to overestimate their performance and take more risks. Actual driving records indicate that people who take amphetamines are slightly more accident prone, probably for these reasons.

While heavy amphetamine use will keep drivers awake and active for long stretches of time, it will also make them less coordinated, edgy, and, as one accident study found, four times more likely to be involved in a car crash.

Little information exists to date about cocaine's effects on psychomotor driving skills. Research does show, hoever, that typical social amounts of cocaine can produce lapses in attention and concentration.

Although caffeine can help the drowsy driver stay alert, it can't make the drunk driver sober. Studies show that ordinary amounts of caffeine do not improve an inebriated subject's driving skills.

HALLUCINOGENS AND PCP

These drugs distort judgment and reality, cause confusion and panic, and can produce psychotic-like reactions. They should not be mixed with driving.

OVER-THE-COUNTER DRUGS

Many over-the-counter drugs produce drowsiness in some people that can affect their driving. Drivers should read the labels and be especially careful with antihistamines, other cold preparations, or any medicine that relaxes or promotes sleep.

SESSION 7

FEELINGS AND DECISIONS

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO IDENTIFY HIS/HER FEELINGS ABOUT THE USE OF ALCOHOL, AND UNDERSTAND HOW THEY INFLUENCE HIS/HER DECISIONS.

TEACHING METHODS: Group work

OPTION A

PAGE: 46

TOPIC: Feelings and Decisons

APPROXIMATE TIME: 50 minutes

focus

The student will be able to identify his/her feelings about the use of alcohol and understand how they influence his/her behavior.

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Kit: Feel Wheels	1. Divide students into five groups. 2. Have groups circle around a "Feel Wheel." 3. Have each student take out a marker (e.g., pen, ring, coin, etc.). 4. Explain the each time you read a statement, students are to place their markers on the wheel according to how they feel about the statement. Note: If students do not wish to express their feelings, they can put their marker in the space marked "sanctuary." If they have a feeling that is not represented on the wheel, they can mark "free zone" and if their feelings are changing and/or they are unsure how they feel, they can mark "transition." 5. Select statements from the list provided (see following page) or create your own. 6. After marking their feelings, give the groups time to discuss why they marked the way they did. 7. Discuss with students how being under the influence of feelings effects their decisions and behaviors. 8. At the conclusion of the activity ask each student to share an "I learned..." statement with the class.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*
Read Yellow Pages Decision Making, p. 10-16		

FEEL WHEEL SITUATIONS

1. How do you feel about someone you don't know being picked up for DWI?

2. It's late Friday night when you get a phone call at home. It's your best friend calling from jail. He/she has been arrested for DWI and wants you to come and drive him/her home. Mark your feeling on the wheel. Discuss what you would do.

3. How do you feel about a drunken driver who kills your best friend in an accident? Mark you feeling. Discuss what should be done with that person.

4. How do you feel about a parent who allows his/her teenagers to drink at home?

5. What are your feelings about having keggers?

6. How do you feel about asking someone you don't know to buy beer for you for a party?

7. How do you feel about your date who doesn't drink alcoholic beverages at a party?

8. How do you feel about a friend who has a drinking problem but refuses to get help?

9. How do you feel about a friend who is drunk at a party and is leaving to drive home with three other people? Mark your feeling. Discuss what you would do.

10. How do you feel about riding in a car with a driver who has been drinking?

11. How do you feel about being approached by a "wino" who asks you for a quarter to buy coffee.

12. How do you feel about adults who buy alcoholic beverages for minors?

13. How do you feel about police who cruise drinking spots Friday and Saturday nights to catch young people drinking?

14. How do you feel about the host/hostess at a party who lets people drive home who are under the influence of alcohol? What could you do?

TEACHING METHODS: Individual work and small group discussions

PAGE: 48

TOPIC: Feelings and Decisions (OPTION B)

APPROXIMATE TIME: 30-40 minutes

focus

The student will be able to identify his/her feelings and attitudes about the use of alcohol, and understand how they influence his/her decisions.

prep

Special Preparation Steps:

Prepare copies of the worksheet.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: Alcohol Attitudes worksheet, p. Instructor Provides Chalk Chalkboard Read Yellow Pages Decision-Making p. 10-16	1. Explain that this activity will give the students an opportunity to explore their own feelings toward alcohol and a chance to look at their impact on safety and well-being. 2. Distribute the worksheets. 3. Have students rank the characters on the sheet as the directions indicate. 4. When all students have completed their ranking, take a quick tally to see how many ranked each character as #1 or #2 and how many ranked each character as #7 or #8. This should show the extremes. Write the tally on the board. 5. Ask if there are any general comments. 6. Divide the class into groups of four to six. 7. Ask them to individually look at the "Driver" and think of as many possible consequences of this behavior as they can. Write these down on the back of the worksheet. Then ask them to do the same thing with the "Father." 8. When completed, ask the students to share within their groups first, the consequences of the "Driver's" behavior and second, the consequences of the "Father's " behavior. Allow time for discussion. 9. At the end of the discussion, ask the students to re-rank their worksheets, if they would like to, as a result of their discussion.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh! Wow!*

ALCOHOL ATTITUDES

Directions:

Read the description of the fictitious people listed below and rank them on the basis of how strongly you feel about the behavior of each individual. No. 1 would represent the individual which you feel has the most negative behavior and No. 8 would be the least negative behavior. For example, one might rank a person who deliberately gives a child an apple in which he/she has hidden razor blades as No. 1, and one who cheats on his/her diet by having a candy bar as No. 8.

Individual Rank		Group Response
_____Friend	An adult who buys beer in a grocery store to give to her/his friends who are under 21 years of age.	_____
_____Counselor	A student who comes to a counselor in school to tell him/her of his involvement with alcohol, and the counselor tells his/her parents.	_____
_____Boozer	Person who comes to the office party drunk.	_____
_____Teacher	Teacher who believes very strongly that alcohol is bad and has told a few things to his/her students that weren't true just so they would be sure not to drink.	_____
_____Father	Father who drinks a couple of beers each evening to be sociable but yells when he hears his 15-year-old son has been drinking at a party.	_____
_____Driver	A 22-year-old girl who has been drinking heavily at a party and decides to drive her friends home in her new car.	_____
_____Police	Police officer who knows of a sophomore kegger but doesn't investigate because he/she says, "Kids will be kids."	_____
_____Alcoholic	Man who argues with his wife and causes family problems because he can't hold a job.	_____

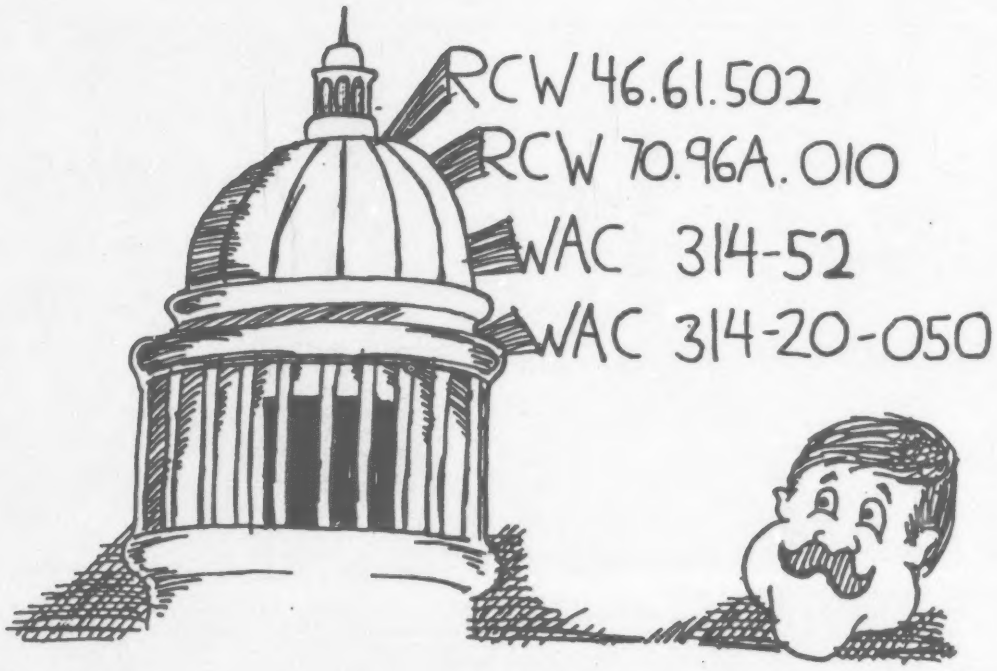
EIGHT HOUR COURSE

IF YOU HAVE UP TO EIGHT HOURS, THE LESSONS IN THIS SECTION CAN BE ADDED TO THE PREVIOUS LESSONS.

SESSION 8

THE LAW

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO IDENTIFY THE LAWS WHICH RELATE TO ALCOHOL, DRUGS AND DRIVING IN HIS/HER COMMUNITY AND ESTIMATE THE PROBABLE COSTS OF BEING ARRESTED FOR A DWI OFFENSE.



TEACHING METHODS: Lecture/discussion

PAGE: 50

TOPIC: The Law

APPROXIMATE TIME: 50 minutes

focus

The student will be able to:
1. identify the laws which relate to alcohol and driving in his/her community.
2. estimate the probable cost of being arrested for DWI.

prep

Special Preparation Steps:

Make copies of the worksheet. Invite a state patrol officer or other law enforcement speaker (optional).

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: "Monetary Cost of DWI" worksheet, p. 52	1. Ask students to write down one question they have about the laws relating to any three of these areas: a. DWI b. Minors and alcohol c. Drinking in public d. Being drunk in public e. Having alcohol in a car f. Penalties g. Breathalyzer h. License suspension or revocation	
	2. Discuss with the class the laws of the state of Washington which relate to drinking and driving. Discussion should include the areas mentioned above plus (and not limited to): a. Physical control b. Deferred prosecution c. Implied consent d. AIS e. Habitual offender f. Serving alcohol to intoxicated persons	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*
Read Yellow Pages Laws, p. 78-87	3. Ask the students to refer to their written questions to see if they were all answered. Deal with remaining questions.	
	Activity continued on following page.	

TEACHING METHODS:

PAGE: 51

TOPIC: The Law

APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
	Activity continued. 4. Ask students to brainstorm what types of costs might be incurred as a result of being arrested for DWI (e.g., fine, insurance, etc.). 5. For each category listed in #4, ask students to estimate the actual approximate average cost. 6. Distribute copies of the worksheet, discuss each category and the actual costs associated with them. 7. Conclude by asking students to think of things they could purchase with the money spend on a DWI.	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

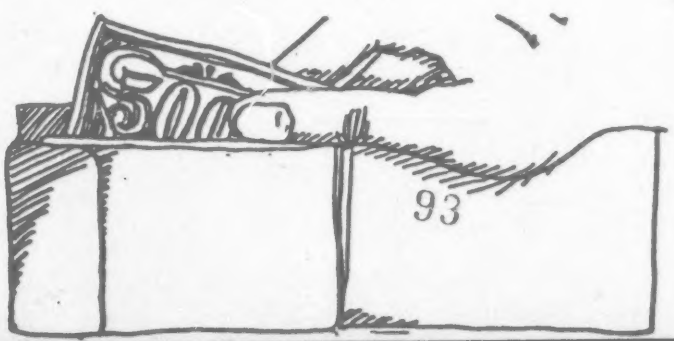
"MONETARY COST OF A DWI"

First Offense

		COST
1.	HIGHER INSURANCE COST - average cost is $800 per year (must carry at least three years)	$ 2,400
2.	LAWYER FEES - Average cost is $250 minimum, $700 maximum. It may be as much as $1,000 with a jury trial and appeal.	500
3.	FINES - Average fine is $300	300
4.	COST OF ALCOHOL INFORMATION SCHOOL - Average is $50	50
5.	BAIL BONDSPERSON - (approximate)	40
6.	TOWING FEES - Statewide average fee	26
7.	STORAGE FEES	$_____
8.	DAMAGES - Your car (other car plus property damage if uninsured--maybe a damage suit, too) Personal injuries to yourself or others?	$_____
9.	TIME OFF FROM WORK - If you work, estimate the money that you would lose by being in jail (1 day), time off from work for court (1 day)	$_____
10.	REINSTATEMENT OF YOUR LICENSE	10
11.	LICENSE SUSPENDED (include bus fare here) for usually 30 days	$_____
12.	PUBLIC TRANSPORTATION	$_____
13.	OTHER	$_____

GRAND TOTAL: $_____

DID YOU KNOW? You can avoid all of the above by taking a short taxi ride home. You can take a taxi about 1500 miles for around $500. It's free to stay where you are until you sober up, or have a sober friend drive you home.



SESSION 9

RISK

AS A RESULT OF THIS SESSION, THE STUDENT WILL BE ABLE TO IDENTIFY HIS/HER OWN LEVELS OF RISK AND THE IMPACT THAT MIGHT HAVE ON DRIVING BEHAVIOR.

TEACHING METHODS: Worksheet/Discussion

OPTION A

PAGE: 53

TOPIC: Risk Taking

APPROXIMATE TIME: 30-40 minutes

focus

The student will be able to identify his/her own levels of risk and the impact that might have on driving behavior.

prep

Special Preparation Steps:

Reserve overhead. Duplicate "Situations" handout.

lesson outline

RESOURCES	ACTIVITY	EVALUATION
From the Guide: "Risk Situations" handout, p. 55 From the Kit: Risk Levels Transparency Instructor Provides Overhead projector Read Yellow Pages Decision Making p. 10-16	1. Introduce by asking why some people take higher and lower risks than others do. Have students speculate about their risk-taking theories. Explain that this lesson deals with risk-taking and its impact upon decision-making. 2. Distribute Situations handout to each student. 3. Using the transparency, explain what is meant by high risk-low gain, etc. Give an example (e.g., most people would agree that a person who shoots heroin on weekends would be involved in a high risk--legal, health, economic--and low gain activity). 4. Have students fill out worksheets independently, indicating their perceptions of risk and gain in each situation. 5. Have students form small groups and discuss the risks involved and how to handle the situations listed. 6. Summarize their conclusions by discussing the following questions: a. Why are some people more likely to take risks than others in a given situation? b. Expand on the statement that risk and gain are both in the eye of the person contemplating the risk. c. Would you agree or disagree that to learn or grow or change, one must risk? d. Is risk-taking good or bad? Why?	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

Activity continued on following page.

TEACHING METHODS:

OPTION A

PAGE: 54

TOPIC: Risk Taking

APPROXIMATE TIME:

focus

prep

Special Preparation Steps:

	RESOURCES	ACTIVITY	EVALUATION
lesson outline		Activity continued. 6. e. How might risk taking impact your drinking behavior? f. How might risk taking impact your driving behavior?	

COMMENTS OR SUGGESTED CHANGES

Teacher evaluation of activity. Please circle:

1 2 3 4 5

Ugh! *Wow!*

RISK SITUATIONS

Risk				Gain		
High	Medium	Low		High	Medium	Low
			1. Driving home after drinking too much.			
			2. Having two drinks in one hour and then driving home.			
			3. Riding home with a driver who has been drinking.			
			4. Riding home with a driver who has been smoking marijuana.			
			5. Hitchhiking late Saturday night.			
			6. Taking a pain pill which was prescribed for your mother last year.			
			7. Taking some "No-Doz" when studying late for an exam.			
			8. Using smoking as a method to keep your weight down.			
			9. "Borrow" some vodka from your parents for a party.			
			10. Rock Climbing.			
			11. Hang gliding.			
			12. Taking a pill (you don't know what it is).			
			13. Reporting a friend for selling drugs.			
			14. Telling a friend he/she has a drug problem.			
			15. Telling a friend they have had too much to drink and they can't drive.			
			16. Refusing to drink at a party.			

TEACHING METHODS: Individual work/discussion

OPTION B

PAGE: 56

TOPIC: Risk Taking

APPROXIMATE TIME: 30-40 minutes

focus

The student will be able to identify his/her own levels of risk and the impact that might have on driving behavior.

prep

Special Preparation Steps:

lesson outline

RESOURCES	ACTIVITY	EVALUATION
Read Yellow Pages Decision-Making p. 10-16	1. Introduce the lesson by sharing a situation where you (the instructor) have taken a risk. Ask students why some people take higher and lower risks than others do. Explain that this lesson deals with risk taking and its impact upon decision making about alcohol and safety. 2. Ask students to write down the greatest risk they can ever remember taking in the following areas. Physical, economic, interpersonal, and alcohol related. (These should be risks students are willing to share in a small group.) 3. Once students have completed the writing, ask them to group in groups of five to six and share the risks they identified. 4. Ask students to then rate themselves as being high, medium, or low risk takers in the following categories: physical, economic, interpersonal, and alcohol related. 5. As a class, discuss the following questions: a. What gain did you derive from the risks you took? b. How might risk taking effect your decisions about drinking and driving? c. Is risk taking good or bad? d. Would you agree or disagree that to learn or grow or change, one must risk?	COMMENTS OR SUGGESTED CHANGES *Teacher evaluation of activity. Please circle:* 1 2 3 4 5 *Ugh!* *Wow!*

THE YELLOW PAGES

(A RESOURCE SUPPLEMENT)

YELLOW PAGES

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GLOSSARY

Absorption: The process by which alcohol enters the blood stream from the small intestine and stomach. The rate of absorption is affected by rate of consumption, body weight, presence of food in the stomach, body chemistry, and type of beverage.

Abstinence: Not drinking any alcoholic beverage.

Addiction: Physiological and/or psychological dependence on a drug. The overpowering physical or emotional urge to do something repeatedly that an individual cannot control, accompanied by a tolerance for the drug and withdrawal symptoms if the drug use is stopped. (See also physiological and psychological dependence.)

Alcohol (Ethyl): The intoxicating chemical (C_2H_5OH) found in liquors and produced by the action of yeast on sugars and starches. Often referred to as "beverage alcohol" as opposed to methyl alcohol which is not consumable and is primarily used for industrial purposes. Alcohol is classified as a central nervous system (CNS) depressant.

Al-Anon: An organization of spouses, relatives or friends or alcoholics who meet to try to provide each other with support and to solve common problems.

Alateen: An organization of children of alcoholics who meet and try to provide each other with support and solve common problems.

Alcoholics Anonymous ("AA"): An organization of alcoholics who meet to discuss their problems in an effort to control their addiction to alcohol.

Alcoholic: The term "alcoholic" has been variously defined at different times and by different people. However, three aspects of the alcoholic have generally been agreed upon:

1. The alcoholic's drinking pattern is incompatible with what is expected by the other members of society.

2. Alcoholics have an urge to drink or to continue drinking once they start that they cannot control.

3. An alcoholic's drinking creates either social, economic or health problems for themselves, their family and/or society.

Alcoholism: As defined in the Uniform Act, alcoholism means an illness characterized by habitual lack of self-control as to the consumption of alcoholic beverages or the consumption of alcoholic beverages to the extent that a person's health is substantially impaired or endangered or his social and economic function is substantially disrupted.

Barbiturate: A chemical derivative of barbituric acid which will produce a calming effect as well as sleep, and which is capable of producing mental and/or physical dependence with prolonged or frequent use.

Bender: (slang) A period of continuous intake of alcohol with the intent of getting drunk.

Blackout: A period of temporary amnesia which occurs while the person is drinking. During a blackout, the person is conscious and walks, talks, and acts but can't remember any of the events the next day.

Blood Alcohol Content (BAC) (or Blood Alcohol Level): The percentage of alcohol in the blood stream at any given time.

Breathalyzer: An instrument used to measure the alcohol content of a person's blood through an analysis of the person's breath.

Brewing: The fermentation of grains that results in beer or ale.

Central Nervous System: The system which controls and coordinates the other systems of the human body.

Cerebellum: The back part of the brain; controls the balanced movement of muscles.

Cerebrum: The part of the brain above and in front; it controls thought.

Chronic: Of long duration; denoting a disease of slow progress and long continuance.

Cirrhosis: The replacement of liver tissue with scar tissue due either to malnutrition and/or excessive and prolonged alcohol use.

Decision-Making: Any action one chooses to take or not to take is the result of a decision-making process. Decision-making is a skill which must be learned. Becoming aware of this process, the opportunities to make decisions, and one's decision-making style frees an individual to be and become what he or she chooses. It also brings the concept of individual responsibility for one's behavior very clearly into focus.

Deferred Prosecution Law (RCW 10.05): Persons may petition the court, stating that their crime was related in part to an alcohol, drug or mental problem. The court may then refer that person to an appropriate diagnosis and evaluation facility. Final prosecution may be deferred pending results of that evaluation.

Delirium Tremens ("D.T.'s"): A serious and sometimes fatal condition some alcoholics develop when they suddenly stop drinking, much like the withdrawal symptoms of other drug addicts. Symptoms can include hallucinations ("delirium"), uncontrollable shaking ("tremens"), terror, and agitation, and fever.

Depressant: Any chemical which diminishes the activity of the central nervous system, usually resulting in dulled reflexes, impaired thought processes, and distorted perceptions, when taken in large amounts. Alcohol is a CNS depressant.

Detoxification: 1) Also called "drying out." The process of sobering up and withdrawing from toxic or poisonous effects of alcohol.

2) The process carried out by the liver in changing chemicals like alcohol into non-toxic substances.

Distillation: Evaporation of liquid by heat and condensing the resultant vapors into a liquid.

Distilled Spirits (Beverages): Beverages made by the distilling process usually containing at least 20% alcohol by volume. These include whiskey, gin, rum, brandy, tequila, vodka, liqueurs, etc.

D.W.I. (or Driving While Under the Influence or "Drunk Driving") (RCW 46.61.502): A person is guilty of driving while under the influence of intoxicating liquor or any drug if he/she drives a vehicle within this state while:

1) He/she has a B.A.C. of .10 percent or more; or

2) He/she is under the influence of or affected by intoxicating liquor or any drug; or

3) He/she is under the combined influence of or affected by intoxicating liquor and any drug.

Elimination: The process by which some of the alcohol consumed (2% - 5%) is removed from the body via the breath, urine or sweat glands.

F.A.S. (Fetal Alcohol Syndrome): The phenomenon of adverse effects noted by physicians among offsprings of women who drink alcoholic beverages during pregnancy.

Fermentation: The chemical reaction that produces alcohol when yeast and sugar are combined. The process by which wine and beer are manufactured.

Hangover: The unpleasant physical sensations experienced after the effects of excessive drinking wear off. Symptoms can include nausea, headache, thirst, and fatigue. No effective cure is known.

Hard Liquor: Term used to refer to distilled beverages as opposed to beer and wine.

Impaired Driver: The driver whose skill and judgment have been decreased due to alcohol and/or some other drugs or conditions.

Implied Consent Law (RCW 46.20.308): A law which stipulates that by obtaining a driver's license an individual has implied his/her consent to submit to a chemical blood-alcohol level (breathalyzer) test upon the request of a law enforcement officer or have his/her driver's license revoked for six months.

Intoxication: The physical and emotional effects of excessive drinking. In Washington, one is legally intoxicated (as related to driving) if one has a blood-alcohol level of .10 per cent or higher.

Kegger: (slang) A party held primarily for the purpose of drinking beer. Beer is usually supplied in the form of kegs. Most common with junior high, senior high and college groups.

Malt Beverages: Alcoholic beverages produced from barley, hops, corn, sugar, water, and other ingredients. Includes beer, ale, etc.

Oxidation: The process by which the liver converts alcohol into heat + energy and releases carbon dioxide (which is exhaled) + water (which is eliminated as urine).

Physical Dependence: Addiction to a drug. It has two parts: (1) the user has very painful withdrawal sickness when he quits using the drugs. (2) the body gets used to the drug. So it takes more and more of the drug to get the effect the user wants.

Physiological Dependence: The physical urge to use a substance that an individual cannot control. The individual requires an increasing dose of the substance to get the same effect and physical withdrawal signs develop if the substance used is stopped.

Potentiate: To make a drug more effective or more powerful, usually by the means of a second drug. For example, alcohol potentiates the effects of many drugs.

Potentiation: If one drug causes a second drug to be metabolized slower than normal, the drug remains in the system longer than it is supposed to and the effects of the drug are greatly magnified.

Presumptive Level: The level of alcohol concentration in the blood which is legal evidence of intoxication (0.10% in Washington and most other states).

Problem Drinker: People whose use of alcohol creates problems for themselves and/or others. Individuals who are problem drinkers may or may not be alcoholic.

Prohibition: The period in American history from 1919 to 1933 when it was illegal nationwide to manufacture, transport or sell alcoholic beverages.

Proof: A number which is equivalent to double the alcohol content of whiskey (86 proof whiskey contains 43% alcohol). In Colonial America the high alcohol content of a beverage was considered "proven" if, when combined with gunpowder, it was capable of burning with a steady flame.

Psychological Dependence: A condition resulting from repeated use of a drug in which the individual must continue to take the drug to satisfy a strong emotional need.

Skid Row: (Skid Road) Term used to refer to the area of cities where "drunken bums" hang out. Also a derogatory term applied to those people.

Social Drinker: A person who drinks occasionally at social functions and whose drinking does not create personal or social problems.

Stimulant: Any chemical which increases the activity of the central nervous system, usually resulting in sharpened reflexes, and either sharper or distorted perceptions depending on the dose and chemical.

Synergism: The simultaneous action of separate drugs which, together have greater total effect than the sum of their individual effects; the potentiating effects are not additive (2 + 4 = 6), but are multiplicative (2 x 4 = 8). (Also, see Drug Interaction.)

Temperance: Literally, use of alcohol in moderation. Historically, as in the Temperance Movement, either use of alcohol in moderation or total abstinence.

Tolerance: Physical tolerance is the body's ability to overcome the usual effects of a drug so that an increased dosage is needed to achieve the same effect as before for the individual. Also an individual's ability to compensate for the physical and psychological effects of alcohol use.

Treatment: Means the broad range of planned and continuing in-patient, out-patient, and residential services including diagnostic evaluation, counseling, medical, psychiatric, psychological, social service care, and occupational services which may be extended to substance abusers and which is geared toward influencing the behavior of an individual to achieve a state of rehabilitation.

Whisky or Whiskey: A distilled beverage made from fermented grain with content between 80 and 110 proof, and aged in charred oak barrels.

Withdrawal: After developing physical dependence on a drug, this is the result of discontinuing its intake. With alcohol this causes various reactions from mild disorientation, hallucinations, shaking, and convulsions to "delirium tremens" ("D.T.'s").

MYTHS ABOUT ALCOHOL

It has been relatively few years since scientists have begun to look closely at alcohol and the effects that this substance has on the human organism. Many of the things we currently believe about alcohol are, therefore, things that have been passed down to us through the countless centuries since alcohol was first used by human beings. It is only natural that some of our beliefs would fall into the category of myths rather than scientific fact.

Listed below are some of the more common myths. You may want to look at other things you believe about alcohol in light of current research.

A. ALCOHOL AND PERFORMANCE

I drive better after a few drinks. Alcohol does not normally increase physical or mental skills. What it may do is increase confidence and decrease judgment and self-criticism. The drinker may feel as if his performance has improved when in reality it may have declined. At least half of the fatal highway accidents involve drinking.

Alcohol increases sexual desire and ability. Contrary to popular belief, the more you drink, the less your sexual capacity. The depressant action of alcohol lowers inhibitions. Therefore the drinker may respond more freely to sexual stimulation. But, like other activities, too much alcohol reduces performance abilities.

B. ALCOHOLISM

I don't know any alcoholics. Maybe you just don't know you know any alcoholics. Some of your best friends may have drinking problems. They don't seem "different," and they usually try to hide their illness, even from themselves. About one of every ten people who drink has a drinking problem.

Most alcoholics are skid row bums. Alcoholism shows no favorites. It is found among all classes of people. It has been estimated that only three to five per cent of all alcoholics live on skid row. Furthermore, it seems that only a minority of those living on skid row are alcoholics.

You're not alcoholic unless you drink a pint a day. There's no simple rule of thumb. Experts have concluded that how much people drink may be far less important than when they drink, how they drink, why they drink, and what happens to them when they drink.

Most alcoholics are middle-aged or older. A University of California research team has found that the highest proportion of drinking problems is among men in their early twenties. The second highest incidence occurs among men in their 40's and 50's.

Alcoholics are morally weak. Although there are still people who disagree, alcoholism has been medically and legally classified as an illness. Alcoholics are no more responsible for their drinking than tuberculosis patients are for their coughing.

All alcoholics drink in the morning. Although the craving for a morning drink is a common symptom among chronic alcoholics, there are those who don't display it. It is not when drinking occurs, but the lack of control over it when it does occur that defines alcoholism.

You can't become an alcoholic by drinking only beer. Even though the percentage is relatively low (2% - 5%), beer still contains the potentially addicting ingredient--ethyl alcohol. People who drink beer merely have to drink more liquid to get drunk than they would wine or whiskey.

Alcoholics drink every day. Some alcoholics drink only on weekends, some abstain for months. Alcoholism is not determined by how often people drink, but whether or not they can control their drinking once they start.

Women don't become alcoholics. Women do become alcoholics, but are not as likely to be diagnosed as such, since they are more easily camouflaged by the protective setting of the home. During recent years, the estimated ratio of men to women alcoholics has dropped. The increase in the number of women alcoholics has been explained both as an increase in the willingness to be treated, and therefore "discovered," and as an increase in the actual number of cases.

I'm just a social drinker. Just because you never drink alone doesn't mean you can't have a drinking problem. Plenty of "social drinkers" become alcoholics.

The really serious problem in our society is drug abuse. Right. And the number one drug problem is alcohol abuse. About 10,000,000 Americans are addicted to alcohol.

C. ATTITUDES ABOUT DRINKING

People who drink too much only hurt themselves. And their families, and their friends, employers, strangers on the highways and you.

Thank God my kids aren't on drugs! If they're hooked on drinking, they're on drugs. With ten million Americans dependent on alcohol, it's time we stopped pretending it isn't a drug. The kids' favorite drug is the same as their parents' favorite: alcohol.

"What a Man!" Still on his feet after a whole fifth. When we stop thinking it's manly to drink too much, we have begun to grow up. It's no more manly to over-drink than it is to over-eat. Often people who seem to be able to out-drink others are developing a tolerance for alcohol and become dependent on it.

Getting drunk is funny. Maybe in the movies or in jokes, but not in real life! Drunkenness is no funnier than any other illness.

D. DRINKING PATTERNS

If the parents don't drink, the children won't drink. Sometimes, but the highest incidence of alcoholism occurs among offspring of parents who are either teetotalers or alcoholics. Perhaps the "extremism" of the parents' attitudes is an important factor.

E. HANGOVERS

The best cure for a hangover is . . . . Everybody has a favorite, but they all have one thing in common: They don't work! What works? Preventive medicine. If you don't drink too much, you won't get a hangover.

F. PROPERTIES OF ALCOHOL

Alcohol warms the body. Alcohol makes the drinker feel warmer because it causes blood to rise to the skin's surface. However, when this happens, the body temperature is actually lowered because the surface heat is lost.

Alcohol cures colds. Although some symptoms of the cold might be temporarily relieved, alcohol does not cure colds.

Eating foods made with alcohol can cause intoxication. When alcohol is used in cooking, little remains in the food as the alcohol evaporates when heated. Even if the alcohol is not heated, not enough is used to have any effects except for taste.

Mixing drinks causes greater intoxication. Only the consumption of ethyl alcohol, the ingredient common to all alcoholic beverages, causes intoxication, not the mixing of drinks. A person may tend to consume more when there is a variety of drinks, but it is still only the total amount of ethyl alcohol that counts.

Alcohol is a stimulant. Alcohol is about as good a stimulant as ether. Although in small quantities, it may be initially stimulating or irritating, it is primarily a depressant. The first area of the brain alcohol affects is the area which regulates inhibitions, judgment, and self-control. It is

the lack of such restraints that causes the apparently "stimulated" or uninhibited behavior and people may do things they might not otherwise do.

People are friendlier when they're drunk. Maybe. But they're also more hostile, more dangerous, more criminal, more homicidal, and more suicidal. Half of all murders and one-third of all suicides are alcohol related.

Alcohol is a medicine. It is true that alcohol was called the miracle of life when the distillation process was discovered around the fourteenth or fifteenth century. These claims never held up, however, and there are currently very limited medical uses for this drug.

It's okay to combine alcohol and other drugs. Using more than one drug at a time can be extremely hazardous. The effects may be additive (2 + 4 = 6), multiplicative (2 x 4 = 8) or they may interact in unknown ways. Many of the drug overdoses and deaths are related to combining different drugs with alcohol.

G. SOBERING UP

Black coffee and a cold shower will sober you up. Alleged methods for sobering up range from hot coffee to cold showers, from fresh air to food. The only effect any of these treatments can have is to produce a wide-awake drunk. An awakened drunk, feeling sobered up, may attempt to perform tasks, such as driving, of which he/she is no more capable than the sleepy drunk. Time is the only method of sobering up. There is no way to increase the oxidation rate--the rate at which the body eliminates alcohol.

RESPONSIBLE DECISION-MAKING

The goals and objectives of this course speak to "responsible decisions" about alcohol use. It is important to clearly define this term in order to prevent misconceptions. A "responsible decision" is different for each individual based on a wide variety of factors. For some people, (e.g. certain religions, alcoholics) the only responsible decision is not to drink at all. For others, responsible decisions encompass not only whether or not to drink, but also, if one decides to drink, when, where, how often, how much, etc. However, decisions about alcohol are not limited only to decisions about drinking. A sample of alcohol-related issues requiring responsible decisions include:

- As the host at a party, do you push drinks on your guests?
- Do you let guests drive home from your party when you know they're in no condition to drive?
- Do you provide non-alcoholic beverages for people who choose not to drink?
- If you've had too much to drink at a party, will you stay at a friend's house, let someone who's sober drive, call a cab, or drive home anyway?
- If you drive to a party and know you must drive home, will you drink at all?
- If you or someone in your family has a drinking problem, will you seek help? When? Where?

The ability to make responsible decisions depends on various factors: knowing and practicing decision-making skills, understanding the influence of our feelings, emotions, values, attitudes and self-concept on our decisions, and our ability to cope.

Due to time limitations, the alcohol information school is limited as to how much emphasis can be placed on the issue of decision-making. However, because of its importance and because opportunities can, and do, arise to deal with it, decision-making must be included as part of a comprehensive alcohol information school.

A. DECISION-MAKING SKILLS

People are faced with many life situations in which decisions must be made. Decision-making is something everyone does every day. Because it is a common act, it receives little attention until a person is faced with an important decision that has long-term consequences.

Although the alcohol information schools attempt to help participants learn how to make personally satisfying decisions, a major portion of an instructor's time involves developing information or supplying it to participants. Although extremely important, obtaining information is only

one segment of the decision-making process. A question that should be asked is, "If you are going to provide information to others, what do you want them to do with that information?" We should provide opportunities for people to put information to use.

Decision-making can be defined as a process in which a person selects from two or more possible choices. A decision does not exist unless there is more than one course of action, alternative, or possibility to consider. If a choice exists, the process of deciding may be utilized. Decision-making enables the individual to reason through life situations, to solve problems, and, to some extent, to direct behavior.

There are no "right" answers or outcomes for the decision made, but rather the decision is judged on an effective use of a process that results in satisfying consequences. Important to the development of these skills is the environment in which they are practiced. A non-judgmental atmosphere would seem most appropriate. Since there is no "right" answer, the person making a decision should be free to select from any of the choices available.

Decision-making is a process which can be carried out if an individual possesses certain skills. It is imperative, therefore, that opportunities be provided by the family, school and community for individuals to acquire and utilize those skills, which include:

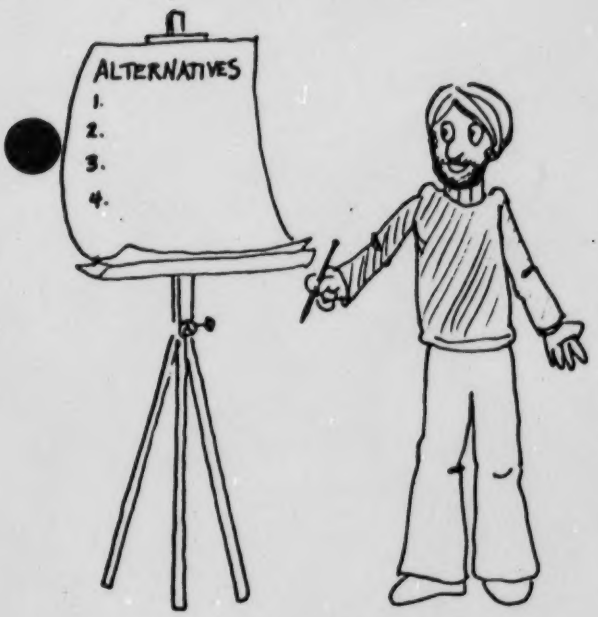
1. Admitting a problem exists and facing it: A person cannot begin to decide about a situation without first recognizing the problem or situation does in fact exist.

2. Defining the problem and who owns it: A person attempting to deal with an issue must first clearly identify what he/she is attempting to deal with and then decide if the problem is his/hers, or belongs to others, or is a shared problem.

3. Identify if the problem can be solved: There are some things which we simply can do nothing about. Once these are identified as roadblocks, more energy can be put into dealing with the real issues.

4. Listing alternative solutions to the problem: A basic step in decision-making is to identify what alternatives are open to a person in a situation.

5. Predicting consequences for oneself and others: Once alternatives are identified, it is important to weigh the potential consequences involved in each, and then rank them in order of preference.



6. Identifying and consulting sources of help: One should consider what sources of help are available to aid in generating or carrying out alternatives. In order to do this, the person involved needs to have some knowledge of the resources available or how to find them.

7. Giving help to others when needed and wanted: The key words in this statement are needed and wanted. Help can only be effective when these two criteria are met.

8. Deciding and evaluating the results: If the decision did not provide satisfactory results, another alternative can be tried. Evaluation of results also allows people to keep track of their ability to come up with satisfying solutions.

Skillful decision-makers have greater control over their lives because they can reduce the amount of uncertainty in their choices and limit the degree to which chance or their peers determine their future. Two individuals may face a similar decision, but each person is different and may place differing values on outcomes. It is the individual who makes each decision unique. Learning decision-making skills, therefore, increases the possibility that each person can achieve that which he/she values. Decisions also have limits. Each decision is necessarily limited by what a person is capable of doing, by what a person is willing to do, and by the environment in which the decision is being made.

B. FEELINGS AND EMOTIONS

The emotions and pressures a person is feeling at any given time can strongly influence that person's ability to make responsible decisions. The individual must be aware of those emotions and pressures, as well as the feelings they create. Once the person understands the various emotions, he/she will be better prepared to recognize an emotion or feeling when it is experienced, and better able to identify the influence of feelings on his/her decisions. This is not intended to create persons who are emotionless in their actions. Instead, it can help people consider all of the factors which influence their decisions rather than acting purely on emotion.

The method of dealing with feelings in the classroom is selected by the instructor. It should reflect the comfort level of the participant and the instructor alike. Whatever methods are chosen should be non-threatening to all those involved, with the end goal being an improved ability to make responsible decisions under conditions of emotional pressure.

C. VALUES AND ATTITUDES

Values have been said to be deep, long-lasting commitments to a concept or doctrine that is highly prized and about which action will be taken in satisfying ways. Values give direction to life and may be considered to be determinants of behavior.

The term values in this section is intended to mean the goals an individual has identified for him/herself. That process of identification is rarely a conscious effort to sort out all of one's attitudes and behaviors and then catagorically state here are my values - 1, 2, 3, etc. More often, it is a matter of being aware that the things one says and does reflect the values one has unconsciously chosen for oneself. Therefore, the decisions a person makes are an indicator of the values he/she holds.

The lesson plans in this guide include some activities designed to help participants become aware of and clarify their values related to alcohol.

The specific methods used will vary with every class and every instructor. Regardless of the method, the key is always helping participants identify in what direction they are headed and whether or not they feel good about that direction. When participants find themselves feeling uncomfortable with the values they hold, they must be given opportunities to investigate ways to change those values and the corresponding behaviors. This is more clearly defined under practice (section F).

Attitudes, on the other hand, are more short term in nature than values. They are feelings that people have about issues, people, etc. that usually play a role in influencing people's decisions.

Attitudes can be the predecessors to values and usually their impact on one's behavior is less than the impact values may have.

Since attitudes play a role in decision-making, it is important to help participants become aware of and deal with their attitudes.

D. SELF-CONCEPT

Self-concept is defined here as the total perception an individual has about him/herself. That is, being able to answer the questions, "Who am I?" and "Who am I in relation to others?"

Self-concept is enhanced when the individual has a strong, positive feeling of belonging and a sense of worth. A person who is comfortable with him/herself will be better able to make a decision in the face of peer pressure on whether or not to drink and be less influenced by that pressure than a person with a poor self-concept.

As a result of the process of education, every participant should feel that he or she is an important and worthwhile individual. At the same time, participants should realize that they are not perfect and that change can be a very positive thing. Participants should be able to identify both their strengths and weaknesses, while understanding that there may be limitations to what each person can achieve.

Within the context of the classroom, the instructor and the participants should help each other realize the strengths they possess. Individuals should attempt to develop positive ways of interacting with other members of the class. Participants in the class should feel free to ask questions, state their opinions or make observations without fear of reprisal, condemnation or ridicule. Similarly, participants should feel free to be themselves, realizing their relationships within the class and respecting the rights and privileges of others. At all times, all involved

must be sensitive to the feelings of each other. Every effort should be made to be positive when dealing with other people. Criticism can become an important part of the classroom environment when it is intended to be constructive rather than destructive.

As participants begin to develop strong, positive self-concepts, their abilities to make responsible decisions will improve. They will be better prepared to make decisions in their own best interests and in the interest of their fellow human beings.

E. RISK-TAKING

It is human to seek more from life than merely remaining alive. There is a never-ending search for satisfaction in living. As we seek answers to the questions about what will bring us satisfaction we do not have absolute answers. Therefore, there is an element of risk in each decision we make about living.

We cannot live without "taking chances." But as intelligent beings, we should be able to weigh possible injury or loss against possible gain and decide whether a risk is worth it.

A study of risk-taking behavior indicates that taking chances is closely tied to an individual's skills in using the decision-making process. Personal values also determine how willing the individual is to take risks.

There are four kinds of risks according to Druker:

- the risk one must accept
- the risk one can afford to take
- the risk one cannot afford to take
- the risk one cannot afford not to take

Risks always involve some type of gain; however, these gains can range from high to low. This creates a kind of matrix.

HIGH RISK LOW GAIN	HIGH RISK HIGH GAIN
LOW RISK LOW GAIN	LOW RISK HIGH GAIN

It may be extremely difficult to move people from a high risk personality to a low risk personality. It is the tendency of people who are low-risk takers themselves to try to change other people's behavior. Instead, it may be more worthwhile, through the process of decision-making, to help people identify the possible gains (consequences) of their risk-taking. Once this can be accomplished, people can begin to change from high-risk/low-gain situations (i.e., alcohol and drug use) to high-risk/high-gain situations (i.e., sky diving, motor cycle racing). The risks remain high, but the potential outcomes are more positively rewarding.

F. PRACTICE

To quote a familiar saying, "Practice makes perfect." Decision-making is no exception. Although perfection may never be achieved, practice can help the individual develop his or her decision-making skills.

We all make a large number of decisions each day, which may range from very trivial to very major. In every case, the skills of decision-making can be put to use either consciously or unconsciously.

In the decision-making process, students should become aware of the steps which include:

1. Defining the Problem - What is the problem? Who's problem is it? Who is being affected?
2. Alternatives - Have all possible alternatives been honestly considered?
3. Consequences - For each alternative, have all the possible consequences been honestly considered?
4. Cost-vs-Benefit - Have all the consequences been honestly compared with each other?
5. Deciding - Was the decision honestly made based on the steps one through three?
6. Evaluation - What were the results of that decision?
7. Reconsider - Should a new decision be made?
8. Steps five and six should be repeated when needed.

Participants can be given a variety of opportunities to discuss how these elements have been used in the past or actually putting them into use in other types of classroom activities.

H. CONCLUSION

Instructors can continually provide participants with experiences which encourage them to incorporate the elements previously described into their own decision-making process. The process should be applied to a variety of different levels, ranging from major to minor decisions. This ability to practice will assist the participants when faced with decisions to make outside the classroom.

The environment within the classroom is critical to the effectiveness of a comprehensive alcohol education program. How participants interact with each other and the instructor will determine to what extent they will benefit from the lessons. Discussions of feelings, values, decisions and self-concept are likely to touch on areas that are very important to each person. The instructor and participants must always keep in mind that each person has the right to his/her feelings and values, and that in many instances, there may be no "right or wrong" answers. Each person also has the option to "pass," that is, to choose not to share his/her feelings with others. The instructor must be especially careful about how he or she responds to comments and questions. If participants feel that the instructor or other participants will put them down for what they feel or believe, then they will seldom express their feelings and beliefs, thus missing an important part of the learning process.

information, feelings, values, self-concept, risk-taking, and decision-making must also be considered in relation to each other. Each factor influences the others and the interrelationships must always be considered. As a result of the process of education, participants should have a better understanding of the decisions they make and the factors which influence those decisions. That understanding should enable them to make more responsible decisions in the future.

INDUSTRY

I. MANUFACTURE OF ALCOHOL

A. Types of Alcohol

The alcohol used in beverages is termed grain alcohol, or ethyl alcohol, the latter being its chemical term. There are several other kinds of alcohol. The most common is termed wood alcohol, its chemical name being methyl. It is obtained by heating wood in a closed container. The resultant vapor is condensed into a liquid, hence the name wood alcohol. It is highly poisonous. When used as a beverage, death or blindness may result.

There is also denatured alcohol. This is a term applied to ethyl alcohol which for industrial purposes has had added to it methyl alcohol, benzine or other substances. These materials render the alcohol unsuitable for beverage purposes but do not interfere with its use in industry.

Ethyl alcohol has very wide and valuable utilizations in industry. Some of these uses are: as a solvent and in drugs, flavoring extracts, perfumes, hair tonics, shaving lotions and various cosmetics. It is a source material from which plastics and certain synthetics come.

It is also a source from which are produced chloroform, ether, ethylene and vinegar. It is used in the preparation of soaps, dyes, imitation leather, explosives, celluloid and photographic film. On account of its low freezing point, it is used as an anti-freeze in automobiles.

Being highly inflammable and combustible as a vapor it is valuable for heat and light and may be used instead of gasoline, though methyl alcohol being less explosive, is generally used for these purposes.

B. Production Methods

Ethyl alcohol is commercially produced by the fermentation process using such microorganisms as yeasts and bacteria. The fermentation of starch and sugar with yeast gives ethyl alcohol and carbon dioxide as follows in a simple equation:

Fermentation

$$(C_6H_{10}O_5)^n \text{ ------- } C_6H_{12}O_6 \text{----------} \rightarrow 2C_2H_5OH + 2CO_2$$

Starch + Glucose + Yeast = Ethyl Alcohol + Carbon Dioxide

Most of the ethyl alcohol produced commercially by fermentation is made from the 'blackstrap molasses' that remains as a residue at the sugar refineries after the crystallizable cane sugar has been removed from the cane sap.

There are two kinds of alcoholic beverages produced initially by fermentations: (1) nondistilled beverages and (2) distilled beverages.

1. Nondistilled beverages - this category includes wines, beer, ale, hard cider, etc. The concentration of alcohol in wine ranges from 10 to 22 per cent by volume, being between 12 and 14 per cent in most wines. Wines are fermented fruit juices. Usually, dry wines have only slight traces of sugar left in them following fermentation. Sweet wine (or "pop" wine) contains from 2 to 15 per cent sugar added after fermentation is complete. Higher concentrations of alcohol in wine (called fortified wines) are secured by adding brandy or wine spirits at the time of commercial bottling. Sparkling wines, such as champagne, contain greater quantities of carbon dioxide. They are dry and contain about 12 per cent alcohol.

American-made beer usually contains from 4 to 5 per cent of alcohol by volume, and from 3.2 to 4 per cent by weight. Ale, like beer, is a malted beverage and contains from 6 to 8 per cent alcohol by volume. Both beer and ale are produced by yeast fermentation of prepared 'wort' from the flour of small grains like wheat and barley. Thus, the term 'grain alcohol' came into use.

Hard cider or apple wine is produced by the yeast fermentation of sweet apple juice. Most apple wines contain from 5 to 10 per cent alcohol by volume.

2. Distilled beverages - a class of beverage 'spirits' that include whiskey, brandy, rum, gin, vodka, etc.

Whiskey is made from the liquid portion of the fermentation tank, called 'distiller's beer.' This liquid is distilled in a simple still to produce raw whiskey. Most raw whiskeys are made from cereal grains and when properly distilled yield from 60 to 80 per cent alcohol by volume. Raw whiskey is then aged in barrels to improve the flavor and then bottled. The "proof" designation on the label indicates the alcohol content (e.g. 80 proof = 40% alcohol by volume).

Brandy, or cognac of French derivation, is made by distilling wine. It contains from 40 to 50 per cent alcohol by volume. Brandy is aged in wooden casks like whiskey and has some traces of methyl (wood) alcohol in it.

Rum is a beverage distilled from molasses derived from sugar cane. It usually contains higher levels of alcohol than whiskey.

Gin is made from neutral spirits (ethyl alcohol) and water. Juniper berries and orange peel are added to the mixture for flavor. The mixture is either distilled or simply strained. Gin is usually 80 to 100 proof.

Vodka, like gin, is a mixture of neutral spirits (ethyl alcohol) and water. Much of the commercial source is 100 proof.

It is important to note that when used in the usual manner, *the volume of alcohol in one drink is equal for distilled and non-distilled beverages.*

BEER		WINE		HARD LIQUOR		
12 oz.	=	5 oz. (12%)	=	1 oz. (100 proof)	=	ONE DRINK
		or				
		2½ oz. (20%)				

II. USES OF ETHYL ALCOHOL

The alcohol of greatest concern in our lives, socially, psychologically and physically is ethyl alcohol. Ethyl alcohol is and has been used for a variety of reasons in our society: Religious, medicinal, culinary, social and celebration. A brief discussion of each is included below:

1. Religious - many groups use alcohol, usually wine, during ceremonies and special occasions and do not discourage the responsible use of alcohol by their members. Among these groups are Catholics, Episcopalians, Lutherans, some Presbyterians, Congregationalists, and Jews. At the same time other religious groups prohibit the use of alcohol by their members, e.g. the Mormons, most Baptists, the Methodists, the Seventh Day Adventists, and the Jehovah's Witnesses. When discussing the use of alcohol one should be aware of religious differences and take time to discuss them.

2. Medicinal - In the past, alcohol has been used for a variety of medical problems. Most of these uses have been discontinued in lieu of better medical techniques, procedures, and medications. Today alcohol may be prescribed by a physician to aid in relaxation or circulation. However, this practice is also decreasing as other medications and techniques are discovered.

3. Culinary - Various wines and liqueurs have been used for centuries in the preparation of many foods: e.g. beef burgundy, chicken cacciatore, creme de menthe over ice cream, rum balls, fruit cake, etc. Although these foods do contain ethyl alcohol, it is usually used in very small amounts for flavor and has little or no effect on people consuming the food.

4. Social - the reasons for drinking socially and the situations where social drinking takes place are too numerous to mention here. However, it is important when teaching about the uses of alcohol to differentiate between social use and abuse of the drug. In our society we generally accept the social drinker. As long as people

drink in a responsible manner, their drinking is considered appropriate. If the drinking is irresponsible, that is, injurious to the individual or society, it should be identified as problem drinking and discussed in that context.

5. Celebration - for many people in our society it is traditional to have a drink or to use alcohol on some occasions such as: weddings, graduations, holidays, new jobs, wakes, closing a business agreement, etc. It should be noted that this is only considered responsible drinking if the drinking is not excessive.

III. MARKETING ETHYL ALCOHOL

A. Competition and Advertising

As in all industries, producers and distributors in the alcoholic beverage industry vie with each other for the buyer's dollar. In addition to the usual marketing practice, competition operates within three limitations which are unique to the industry. Two of them apply to liquor advertising, which is stringently regulated by both government and by the industry itself. The third is in the area of price control.

From state to state and from community to community there are wide variations among the governmental restrictions on advertising alcoholic beverages. Frequently prohibited are advertisements containing scenes of drinking and athletic events. Billboard advertising, window displays, and prize contests are not allowed in some localities. However, within local, state, and federal regulations, the alcoholic beverage industry spends about 4.5 per cent of its total income on advertising.

In accordance with controls imposed on members by the industry itself, distilled liquors are not advertised on radio or television. Beer and wine, however, do use these media. Perhaps as a carryover from the prohibition era, the alcohol industry is watchful of its advertising, because it aims to create and maintain a favorable public image.

The same techniques of persuasion are used for alcohol ads as for other products. Many of these common techniques are explained below:

1. Testimonial. An important person may testify that he/she has used a product. The buyer thinks, "If that person uses it, it must be good." The person may actually know nothing about the quality of the product.

2. Appeal to the senses. Pictures or sounds are used to appeal to the senses. The buyer begins to 'taste' and is motivated to buy.

3. Transfer. A good-looking, sociable, sexy or well-dressed man or woman may sell the product. The buyer associates the product with someone good-looking or admirable and imagines that by using the product he/she will become like that person.

4. Bandwagon. Language may be used that suggests that 'everyone' or 'all the people' are doing it or using it. The buyer doesn't want to be left out, or does not want to appear 'out of it,' and so buys the product.

5. Plainfolks. An ad may show an average person recommending the product, so the average buyer identifies with that person, takes the advice, and buys the product.

6. Glittering generality. An ad may use words like 'best,' 'your first one's never your last one,' 'the only' and 'great.' The claims have no substantiation in fact, but because buyers are bombarded with words that have positive associations, they receive positive impressions of the product.

7. Appeal to romance or fantasy (similar to transfer). White knights, green giants, skilled super athletes may be featured in a commercial. Unreal features and powers are attributed to the product but the buyer associates these powers with the product anyway.

8. Humor. People tend to remember or at least have a positive association with an ad that makes them laugh; when they remember the ad, they think of buying the product.

9. Statistics. Buyers tend to be impressed by statistics. Ads may leave out contingencies or variables such as who conducted the study or what kind of people were polled.

10. Cardstacking. Ads may give one-sided portrayals of their products. Only the beneficial aspects are mentioned, not the weaknesses.

11. Fact vs. Opinion. Statements that are opinions that can't be or haven't been proven carry weight and seem like facts if the buyer is convinced the speakers know what they are talking about.

12. Concern for the public good. Ads which claim concern about social or ecological problems.

B. The Marketing of Alcohol in 1978

Each year Gavin-Jobson Associates of New York compile a variety of statistics on liquor production, distribution, and consumption, and publish them in The Liquor Handbook. The recently released 1979 edition of this publication, detailing liquor statistics for 1978, included the following figures:

Liquor Consumption The year 1978 appears to have been the best year of the seventies for the liquor industry, possibly signalling the end of a 10-year trend of declining growth rates. Apparent consumption of distilled spirits in 1978 reached 44,811,590 wine gallons, an increase of 2.8% over 1977. This figure translates to 2.04 wine gallons of distilled spirits per capita, and 3.01 wine gallons per adult (of legal drinking age) in the United States.

Consumer Spending Consumers spent an estimated $14.9 billion on distilled spirits, compared to $3.6 billion on wine and $19.7 billion on beer. The three top selling liquor brands in 1978 were Bacardi Rum, Seagram's 7 Crown, and Smirnoff Vodka, with sales estimated at over six million cases each.

Taxes The Federal Government collected excise taxes in excess of $4 billion on distilled spirits, nearly $1.5 billion on beer, and $197 million on wine.

Advertising Since liquor and broadcasting industry codes prohibit advertising of liquor on radio and television, distilled spirits are advertised in magazines, newspapers, and such outdoor media as billboards, buses, and taxis. Magazine advertising accounted for 71% of all distilled spirits advertising by liquor producers in 1978, at a cost of slightly more than $181 million. The industry spent an additional $43 million (17%) on outdoor advertising and $31 million (12%) on newspaper advertising, for a total advertising expenditure of $255 million in 1978. (These figures do not include the advertising expenditures of liquor retailers).

Magazine advertising expenditures in 1978 increased a record 52% over 1977, and were double the expenditures for 1975. Much of this change can be attributed to the Seagram Company (36 brands, including Chivas Regal, Lord Calvert Canadian, and Wolfschmidt Vodka), which increased its magazine budget from $17 million in 1976 to $26 million in 1977, to $70 million in 1978. Other major liquor advertisers include: Heublein, $15 million (19 brands, including Black Velvet, Hereford's Cows, and Smirnoff's Vodka); Hiram Walker, $13 million (16 brands, including Canadian Club, Kahlua Liqueur, and Two Fingers Tequlia); Ligget Group, $12.5 million (12 brands, including Grand Marnier Liqueur, J&B Scotch, and Wild Turkey Whiskey); and Brown-Foreman, $10 million (12 brands, including Canadian Mist, Jack Daniels, and Southern Comfort). These five companies accounted for 66% of magazine liquor ads in 1978.

C. Liquor Sales Regulation

When discussing liquor contract laws in various states two major categories must be considered--open license states and control states. Open license states are those states where the alcoholic beverage business operates as a private enterprise under state regulation through a system of licensing. In control states, the business of buying and selling packaged alcoholic beverages is, to some extent operated by the state. Washington is one of the 18 control states in the U.S. Packaged hard liquor is the most common state-sold liquor.

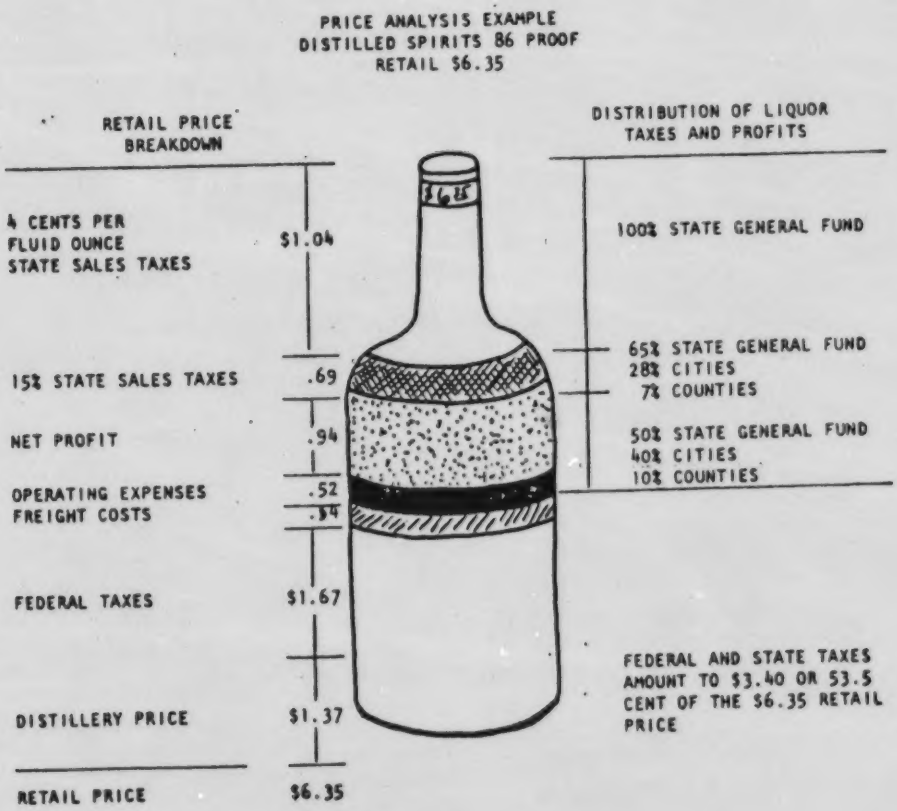
The regulating agency for the state of Washington is the Liquor Control Board. It consists of three members appointed by the governor to staggered nine-year terms, with the advice and consent of the Senate. The Board is generally charged with:

1) management of state-operated liquor stores
2) licensing and regulating of businesses and persons involved in the sale of liquor
3) preventing underage drinking and over-service
4) regulating the manufacture of alcoholic beverages within the state
5) regulation of advertising of alcoholic beverages
6) enforcement of all liquor control laws

The rules and regulations which spell out the authority of the Board are too long and detailed to be included here.

IV. PUBLIC REVENUE FROM THE ALCOHOL INDUSTRY

A quick look at the bottle on the shelves in any liquor store in Washington would show the average price for a fifth of distilled spirits to be about six dollars. This six dollar total price is the result of a variety of costs, taxes and profits.

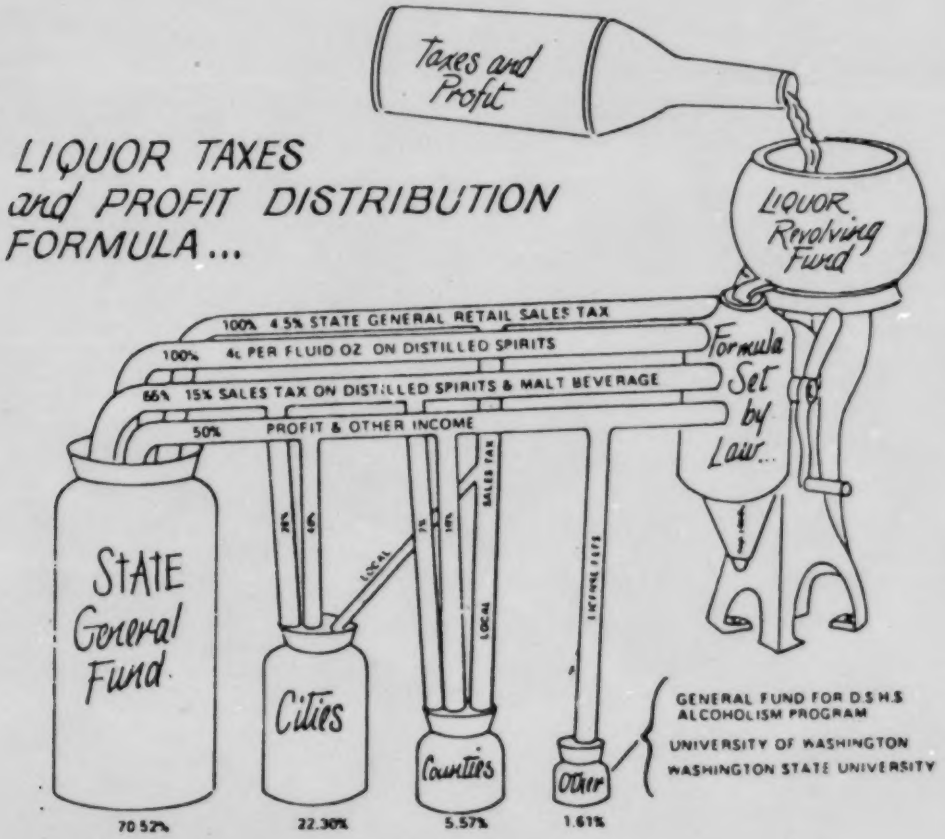


These state taxes along with license fees, permit fees, penalties, forfeitures, and all other money collected by the Board are deposited in the "liquor revolving fund." Part of this fund is set aside for the operating budget of the Board. All Class "H" (hard liquor) license fees, penalties, and forfeitures, up to $1,000,000 every two years, are distributed to the University of Washington and Washington State University for medical and biological research. The excess over $1,000,000 plus 20 per cent of all classes of license fees are allocated to the Department of Social and Health Services for operating the State Office on Alcoholism.

Profits obtained by the state through the sale of alcoholic beverages are distributed so that 50 per cent goes to the general fund, 40 per cent to cities and 10 per cent to counties. Cities and counties are required to spend 2 per cent of their share on alcohol related programs.

A special sales tax on liquor sales is divided between 65 per cent to the State general fund, 28 per cent to cities and 7 per cent to counties with the same 2 per cent requirement for alcohol related programs.

The state general sales tax collected on the sale of alcoholic beverages and the 4¢ per fluid ounce tax on distilled spirits are allocated to the State general fund. In addition, local retail taxes are collected in state liquor stores on wine sales, as is done in the private sector.



During the 1973 calendar year, the gross state revenue generated by liquor sales totalled $281,647,781.

Contrary to the national policy applied to most industries, the government imposes price-cutting restrictions on the beverage alcohol industry. By keeping prices high, government hopes to limit consumption. In eighteen states, retailers by law must adhere to the retail prices set by the manufacturers. The alcohol industry, of course, promotes high levels of alcohol consumption. However, more and more measures are being made to encourage "responsible decisions" about drinking. Most noteable are the efforts to discourage drinking and driving.

EFFECTS OF ALCOHOL

A. OVERVIEW

Current medical doctrines agree that whatever affects one organ may influence others, and that physical, mental, and emotional influences are interdependent. Any discussion of the physical effects of alcohol must, therefore, keep this interdependence in mind. The result being that the physical effects of the drug alcohol may be influenced by variables which are difficult to measure, at best. The atmosphere of a cocktail party, or that of skidroad, a mood of despair or of elation, may well influence alcohol's effects on the individual. With these important considerations, this chapter presents information about the effects of alcohol on the body's activities.

Any food or drug (and alcohol is both) taken into the digestive system is immersed in powerful chemicals and is tossed about by the muscular contractions of the stomach and intestines. Most foods, as a result of this process, are reduced to forms simple enough in molecular and chemical structure to be absorbed and used by the cells. Alcohol is one of the few foods that is already simple enough to be absorbed at once. Its molecules are small enough and its chemical pattern simple enough to be used for fuel almost immediately after swallowing.

The way alcohol is used and disposed of, its metabolism, consists of four phases:

1. Absorption, which takes place in the stomach and small intestine, where alcohol enters the bloodstream.

2. Distribution, in which alcohol travels in the blood to each organ, tissue, and cell. By simple diffusion, alcohol leaves the bloodstream and enters the cells.

3. Oxidation, in which the chemical structure of alcohol is remodeled to release heat and energy. The heat and energy, or calories, resulting from the oxidation of alcohol are used by the body cells. Whereas most foods may be metabolized in any cell of the body, alcohol is metabolized chiefly in the cells of the liver.

4. Elimination, during which a small quantity (two to five percent) of the alcohol escapes unused via the breath, urine, or sweat glands.

Two of the phases of alcohol metabolism, absorption and oxidation, will be discussed more fully below because they are pertinent to the problems arising from misuse of alcohol. The effects from alcohol result when its oxidation lags far behind its absorption.

B. ABSORPTION

Absorption is the process whereby the tiniest of blood vessels, the capillaries, in the walls of the stomach and small intestines pick up alcohol very soon after it is swallowed and transport it throughout the body. Within a few moments after a sip or two is taken, some of

it is detectable in the blood. Once it enters the bloodstream, the alcohol begins to affect the various organs including the brain. It is during the time lag between intake and use, or between absorption and oxidation, that alcohol's effects are experienced. There are numerous influences which may hasten or deter the absorption rate.

On the physical side, how fast people drink, their weight, whether they have recently eaten, their drinking history, body chemistry, and the type of beverage and mixer used are all influential. On the psychological side, the drinking situation, the drinkers' moods and attitudes, and their previous experiences with alcohol are all contributing factors.

1. Speed of drinking. The more rapidly an alcoholic beverage is ingested, the higher will be the peak blood-alcohol concentrations. Thus, these levels are lower when the beverage is "nursed" or taken in divided amounts than when it is gulped or taken in a single dose.

2. Body weight. The greater the weight of the body muscle of an individual, the lower will be his/her blood-alcohol concentration resulting from a given amount of alcohol. For example, the blood-alcohol level produced in a 180-pound person drinking four ounces of distilled spirits will usually be substantially lower than that of a 130-pound person drinking the same amount in the same length of time--and the larger person will usually show fewer effects.

3. Presence of food in the stomach. Eating while drinking notably retards the absorption of alcohol, especially when alcohol is consumed in the form of distilled spirits or wine. When alcoholic beverages are taken along with a substantial meal, peak blood-alcohol concentrations may be reduced by as much as 50 percent.

4. Drinking history and body chemistry. Each individual has a personal pattern of physiological functioning which may affect his/her reactions to alcohol. For example, under a number of conditions the stomach empties more rapidly than is normal, and alcohol seems to be absorbed more quickly. Emptying time may be either slowed or speeded by anger, fear, stress, nausea, and the condition of the stomach tissues. In individuals with a long history of drinking, tolerance to alcohol develops, so that an increased dosage must be used to give effects similar to those obtained with the original dose. Thus, a person with extensive drinking problems is likely to require far more alcohol to get "high" than an inexperienced drinker. In individuals with serious far advanced drinking problems, the curve of tolerance is reversed, and again they are responsive to relatively small amounts of alcohol.

5. Type of beverage. In all the major alcoholic beverages--beer, wines, cocktail or dessert wines, liqueurs or cordials, and distilled spirits--the chief ingredient is identical: ethyl alcohol. In addition, these beverages contain a variety of other chemical constituents. Some come from the original grains,

grapes, and other fruits. Others are produced during the chemical process of fermentation or during distillation or storage. Still others may be added as flavoring or coloring. These nonalcoholic "congeners" contribute in their own right to the effects of certain beverages, either directly affecting the body, or affecting the rates at which alcohol is absorbed into the blood and is oxidized in the tissues.

Beers, wines, and distilled spirits may vary markedly in the rate at which the alcohol they contain is absorbed into the blood. In general, the higher the concentration of the alcohol, the more rapid is its absorption, and the higher the concentration of "congeners," the slower is its absorption. The net result is that beer and wine have slower effects than when the same amount of alcohol is consumed in the form of liquor. However, any two drinks which contain the same amount of alcohol will eventually have the same effects. Diluting an alcoholic beverage with another liquid, such as water, also helps to slow down absorption, but mixing with carbonated beverages may increase the absorption rate.

C. OXIDATION

The speed of alcohol absorption generally affects the rate at which one becomes intoxicated: conversely, the speed of alcohol oxidation affects the rate at which one becomes sober again. Once absorbed into the bloodstream and distributed throughout the body, alcohol undergoes metabolic or oxidative changes. These processes occur in the liver. Alcohol is changed first into acetaldehyde, a highly irritating, toxic chemical; however, this substance rarely accumulates, since it is changed quickly into acetate. Acetate (the same as that produced as an intermediate in sugar and fat metabolism) is transformed into a variety of other compounds, and eventually is changed completely into carbon dioxide and water. The total metabolic process yields about seven calories of energy for each gram of alcohol. (This is compared to nine calories/gram of fat and four calories/gram of carbohydrate or protein.) Almost all of the ingested alcohol is metabolized by the liver; however, from 2 to 5 per cent is excreted, chemically unchanged, mostly in urine, breath, and sweat.

1. The Rate of Oxidation may have a small influence on behavioral tolerance to alcohol, but there are no significant differences in the ability to oxidize alcohol between the alcoholic person and the nonalcoholic. Normal drinkers can metalobize on the average approximately 7 grams per hour of pure alcohol; 8 grams in the form of whiskey and 9 grams in the form of beer. As a general rule, it will take at least as many hours as the number of drinks consumed to sober up completely.

   Considerable effort has been devoted to a search for some method which could effectively speed the rate of alcohol metabolism, and thus provide rapid sobriety. Recent interest has been shown in administering fructose, a fruit sugar; however, neither this nor any other agent has yet been found to make any clinically significant difference in the rate of alcohol metabolism. The ideas of exercise, fresh air, cold showers, hot baths, shock or

black coffee are still tried and may cause a person to feel more wide awake, but the fact remains that they have no effect on the oxidation rate. All one can do is wait, and let the liver do its work.

D. HANGOVER

A familiar aftereffect of overindulgence is the hangover--the morning-after misery of fatigue combined with nausea, upset stomach, anxiety, and headache. The hangover is common and unpleasant, but rarely dangerous. It affects the moderate drinker who occasionally drinks too much, as well as the excessive drinker after prolonged drinking. With tolerance and very high prolonged usage of alcohol, hangovers are replaced with alcohol withdrawal syndrome. The exact mechanism is unknown. Symptoms are usually most severe many hours after the peak of drinking, when little or no alcohol can be detected in the body. Although the hangover has been blamed on mixing drinks, it can be produced by any alcoholic beverage alone, or by pure alcohol. There is inadequate evidence to support beliefs that it is caused by vitamin deficiencies, dehydration, fusel oils (nonalcoholic components of alcoholic beverages which are relatively toxic, but present in clinically insignificant amounts), or any other nonalcoholic components.

No satisfactory specific treatment for hangover is known. There is no scientific evidence to support the curative claims or popular remedies such as coffee, raw egg, oysters, chili peppers, steak sauce, "alkalizers," vitamin preparations, "the hair of the dog," or such drugs as barbiturates, amphetamines or insulin. Doctors usually prescribe aspirin, bed rest, and solid food as soon as possible. Hangovers can be prevented by drinking slowly, with food in the stomach, under relaxed social circumstances, in quantitites limited enough to avoid intoxication.

E. SHORT-TERM EFFECTS

Alcohol is a drug, every bit as active physiologically as many of the so-called "drugs" that are usually ingested as pills. Its primary effects are in the central nervous system although the whole body is affected.

Alcohol is often thought of as a stimulant, because it appears to make people more lively and uninhibited. Indeed, in very low concentrations, it does stimulate cellular activity in most organisms, from the simplest bacteria to the most complex mammals. And, in smaller quantities, alcoholic beverages slightly increase the heart rate, slightly dilate blood vessels in arms, legs, and skin, moderately lower blood pressure, stimulate appetite, increase production of gastric secretion, and markedly stimulate urine output. But as with most other biologically active chemicals, the general physiological effects of alcohol depend on the amount or concentration in the specific cells, tissues, or organs affected. In higher concentrations it can depress function, seriously injure or even kill cells.

Alcohol is technically considered to be a depressant, since it primarily depresses functions of the central nervous system. The reactions are related not necessarily to the amount of alcohol drunk, but to its concentration in the blood. When blood-alcohol levels are low, their effect is usually mild sedation, relaxation, or tranquility. Slightly higher levels, at least in some people, may produce behavioral changes which seem to suggest stimulation of the brain; they become talkative, aggressive, and excessively active. However, these changes are thought to result from depression of the most highly developed brain centers which normally inhibit or restrain such behavior. At still higher levels, great depression of lower parts of the brain occurs, producing lack of coordination, confusion, disorientation, stupor, anesthesia, coma, or death. (See brain diagram on page 43.)

F. LONG-TERM EFFECTS

Drinking alcohol in moderation apparently does the body little permanent harm. But when taken in large doses, over long periods of time, alcohol can prove disastrous, impairing both the quality and length of life. Structural damage to several major organs, such as the heart, brain, and liver may result.

1. Liver. The most common effect in the liver after alcohol intake, which may occur after intake of less than intoxicating amounts, is fatty liver--an accumulation of lipid or fat in varying portions in the liver cells. Fatty liver generally appears to have few functional effects and is reversible upon cessation of alcohol intake. However, recently a syndrome of sudden fatty-liver deaths has been described and it has been reported to be an important cause of sudden death in individuals between the ages of 25 and 44.

   Alcoholic hepatitis is usually considered more serious than fatty liver. It involves an inflammation of the liver and alteration in the structure and function of its cells. These events, which by themselves are significant, are generally considered to be precursors of the subsequent and most serious phase of alcoholic liver disease, cirrhosis.

   Although the continuity between chronic fatty liver, hepatitis and cirrhosis has long been suspected, the question of the progression of these injuries has never been resolved.

   Cirrhosis of the liver is a major cause of incapacitating illness and premature death in alcoholic persons. During cirrhosis the tissues of the liver change in form. Eventually scarring occurs and the liver begins to harden. As this occurs, the liver loses its ability to carry out its functions necessary to human life. Mortality from cirrhosis has risen to the point that in some large urban areas cirrhosis represents the fourth largest cause of death between the ages of 25 and 45. Not all those affected with cirrhosis are alcoholic people, however, nor do all alcoholic persons develop cirrhosis. At one time the concept prevailed

that excessive intake of alcohol by itself is not sufficient to produce cirrhosis and that other factors (i.e., nutrition) must play a key role. However, recent studies have now shown that alcohol in large amounts can cause the whole range of liver diseases despite excellent nutrition. Poor nutrition may compound the problem.

2. Heart. Although the causes of various heart diseases are not yet fully understood, concern about the possible role of alcohol has been growing. However, there appear to be contradictory findings in two different phases of research on heart disease.

   On the one hand, there is evidence that, unlike smoking or high blood pressure, alcohol is not a significant risk factor associated with heart attacks. Other studies of nonalcoholic populations have indicated that moderate alcohol use is actually associated with a lower risk of heart attack, raising the question whether small amounts of alcohol may play a slightly "protective" role against coronary heart disease. This appears to be due to a higher level of HDL cholesterol (the protective form of cholesterol) with occasional drinking.

   On the other hand, recent clinical studies as well as experimental work on cardiomyopathy, a disease of the heart muscle rather than of the coronary blood vessels, have indicated that even moderate amounts of alcohol can stress tissue of the caridum, or the main heart muscle. Medical reports have verified the occurrence of fatalities due to cardiomyopathy in alcoholic persons, even where malnutrition, which formerly was a mian cause of heart disease in alcoholic persons was not involved. Fortunately, the alcoholic cardiomyopathy is fairly uncommon as a cause of heart disease.

   Such contrasting findings complicate preventive health care policies as well as physicians' advice to patients regarding alcohol use. However, the possibility of alcohol having both beneficial and harmful effects is not necessarily a contradiction. Cardiomyopathy and coronary disease are two distinct types of heart disease, involving different parts of the cardiovascular system.

3. Gastrointestinal Tract. The effects of alcohol on other parts of the gastrointestinal tract have not been as intensively studied as those on the liver, but sufficient knowledge is available to indicate that chronic heavy drinking has a variety of injurious effects on the gastrointestinal system.

   When strong alcoholic beverages are taken, the irritating effect causes direct local injury. The possible sites of such injury are the mouth, the stomach, and the esophagus. An increased frequency of cancer of these parts of the digestive tract has been reported among alcoholic persons. Cancer of the esophagus is increased manyfold among acloholics.

   Ingestion of alcoholic beverages stimulates acid production in the stomach, delays emptying of the stomach, and may damage mucous lining. The result is gastritis and a tendency to ulcers.

   Maladies of the small intestine are not often a medical complication in alcoholism, but occasionally they are troublesome. Inability to

absorb various substances, fat and some vitamins have been reported in alcoholic patients. The mechanism by which alcohol affects the small intestine is at present unknown. All the intestinal injuries associated with chronic alcohol abuse appear to be rapidly reversible.

Alcoholism is occasionally associated with pancreatitis and pancreatic insufficiency. Individuals with a long history of alcohol abuse show a diminished response to pancreatic stimulation. These abnormalities are only partially reversible when alcohol is discontinued.

4. Central Nervous System. Of all the physiological, metabolic and pharmacological effects of alcohol that have been discussed, the most common and most important is that alcohol causes intoxication. Incredible as it may seem, however, there is no generally accepted explanation of how alcohol induces intoxication. It has been commonly assumed that alcohol exerts its fundamental effect upon the brain by interacting in some as yet undefined way with the nerve cell membrane. The assumption that alcohol interacts perhaps in a nonspecific manner to impair function, forms the underlying premise of most theories of the actions of alcohol upon the brain during the present century. But, at present, no definitive answer as to the mechanism whereby ethanol induces drunkenness or sleep can be given with certainty.

   Although how alcohol causes intoxication may not be known, its ability to damage the central nervous system has been well studied.

   Heavy drinking over many years may result in serious mental disorders or permanent, irreversible damage to the brain or peripheral nervous system. Critical mental functions such as memory, judgment, and learning ability can deteriorate severely, and an individual's personality structure and reality orientation may disintegrate as well.

   With serious brain damage in alcoholic persons, Korsakoff's syndrome may result. In this condition, patients cannot remember recent events, and compensate for their memory loss by making up fictitious events. In addition, these individuals often suffer from polyneuritis --an inflammation of the nerves that causes burning and prickly sensations in the hands and feet. Vitamin deficiency caused by excessive drinking and inadequate intake of nutritious foods appears to be the primary cause of this condition. Vitamin therapy is often used to treat the polyneuritis and memory deficit, although the effects are not always reversible and for the majority of affected persons, only partial recovery can be anticipated.

   Some studies indicate an increased rate of brain cell damage associated with moderate alcohol intake, while other studies indicate none. Because of the contradiction, this implication warrants further inquiry.

5. Cancer. Studies have implicated the excessive use of alcohol, especially when combined with smoking, in the development of certain cancers. Heavy smoking and heavy drinking seem to be particularly implicated

in mouth, pharynx, and larynx cancer where heavy intake of both has not only an additive but apparently a potentiating effect in increasing risk. Cancer of the esophagus is also associated with heavy consumption of distilled spirits. Primary liver cell cancer is more often seen in persons with history of chronic heavy alcohol consumption. Cancer of the pancreas may also be associated with alcoholism.

6. Alcohol and Nutrition. Malnutrition is commonly observed among alcoholic persons. In recent years this has been more true of those found on skid road, but it is by no means rare among those in better circumstances. One of the main reasons for this is the fact that alcohol itself represents an important source of calories. Each gram of alcohol provides 7.1 calories, which means that an average drink of 86 proof whiskey contains about 100 calories. Therefore, heavy drinkers need less food to fulfill their caloric needs. Since alcoholic beverages do not contain significant amounts of protein, vitamins, or minerals, they provide only "empty calories," and the intake of the vital elements of nutrition by a heavy drinker may readily become borderline or insufficient. Lack of money may also reduce the consumption of nutrient-rich food by the alcoholic person.

   In addition, even in a person consuming a good diet, heavy alcohol intake can result in malnutrition by interfering with the normal processes of food digestion and absorption. As a consequence, there is inadequate digestion of the food actually consumed. Some of the side effects of gastritis also reduce appetite, thereby lessening food intake. Moreover, alcohol appears to affect the capacity of the intestine to absorb various nutrients, including vitamins and amino acids. In addition, malnutrition itself further reduces the capacity of the intestine to absorb various nutrients.

   A particularly dramatic complication of alcohol intoxication is low blood sugar (hypoglycemia) which, if unrecognized, may be responsible for some of the "unexplained" sudden deaths observed in acutely intoxicated alcoholic patients. This complication occurs in individuals whose liver glycogen stores are depleted by fasting or starvation, or in those who have pre-existing abnormalities of carbohydrate metabolism.

G. INTERACTION OF ALCOHOL AND OTHER DRUGS

In light of the current interest in drug abuse generally, and the particular emphasis being accorded the problems of alcohol as the most commonly abused drug, it is pertinent to consider the status of the inter-relationships of the use of alcohol in combination with other drugs. An interaction between alcohol and other drugs may contribute to fatal automobile accidents and accidental or suicidal deaths in individuals who have consumed barbiturates or tranquilizers while they were intoxicated. Indeed, more alcoholic persons die from intoxication by drugs other than alcohol than from alcohol intoxication itself. Moreover, both alcohol intoxication and alcoholism may affect the dosage requirements and safety limits of medically indicated drugs--for example, anesthetics in surgery and anticoagulants after heart attacks.

The interaction of alcohol and drugs appears paradoxical. While intoxicated, individuals are more sensitive to many drugs--for example, sedatives and tranquilizers; alcoholic persons when sober are unusually tolerant of many drugs. This is due to the fact that a single large dose of alcohol leads to the inhibition of the metabolism of other drugs, while prolonged heavy intake leads to accelerated drug metabolism.

On the behavioral level, many other drugs when used simultaneously with alcohol are capable of grossly distorting the usual responses expected from alcohol consumption alone. This is due to the combined effects exerted by alcohol and other drugs on the central nervous system.

The interactive result of taking alcohol and other drugs that also depress the central nervous system may be either additive or potentiative. An additive effect is experienced when a half-dose of one drug taken with a half-dose of another similarly acting drug produce the same effect as a full dose of either drug alone. A potentiative effect results when half-doses of two drugs taken together produce an exaggerated action that is stronger than the effect of a full dose of either drug taken separately. An example of potentiative effect is the combination of barbiturates and alcohol which produces a depressant effect on the central nervous system that is much greater than would occur from either of these drugs taken alone.

During the past several decades, hundreds of new drugs have been produced and introduced to the public. Many of these drugs are legally obtained only through medical prescription. Others are freely available on drug store, supermarket, and specialty-shop counters.

Many of these drugs when combined purposely or accidentally with alcohol produce unexpected and possibly harmful effects. For this reason, the use of any drug with alcohol should be carefully understood and any questions referred to a qualified pharmacist.

Specific Alcohol/Drug Combinations. Because of the wide variety in dosages at which alcohol-drug interactions occur, plus the great variation in the types of adverse effects associated with particular combinations, the following section will focus on the interactions between alcohol and several classes of widely prescribed drugs.

a. Analgesics. Even when used alone, the salicylates -- aspirin being the most common -- commonly cause mild gastrointestinal blood loss and, rarely, severe bleeding. Alcohol also irritates the stomach and intestines. Their combination can cause increased gastritis and fecal blood loss.

   Alcohol combined with salicylates also can predispose patients to delayed clotting and possible hemorrhage, because both drugs tend to inhibit blood platelet function.

b. Anesthetics. Both cross-tolerance and synergistic effects can result from alcohol-anesthetic combinations. Patients who have alcohol in their systems require greater amounts of anesthetic to induce sleep. With chloroform and ether, cross-tolerance has been long observed.

After the initial phase of anesthesia, however, the presence of alcohol results in a supra-additive interaction. A deeper narcosis develops, plus an increase in sleeping time and a lowering of the concentration of anesthetic that is lethal.

c. Antialcohol Preparations. As a treatment for alcohol abuse, disulfiram (Antabuse) acts to enforce abstinence. If a patient taking disulfiram consumes alcohol, the resulting accumulation of acetaldehyde will cause a rise in blood pressure, flushing of face, tachycardia, pounding headache, sense of apprehension, dizziness, rapid breathing, nausea, vomiting, weakness, and fainting. Depending on the doses of the drug and alcohol, the effects can be fatal.

d. Antianginal and Antihypertensive Agents. As a result of an additive interaction, alcohol may increase the blood pressure-lowering capability of some of these drugs, leading to very low blood pressures, faintness, and loss of consciousness.

e. Anticoagulants. The interference of alcohol with the metabolism of oral anticoagulant drugs is variable and not predictable, but can be clinically significant. (Athrombin-K, Coumadin, Panwarfin).

Acute intoxication can reduce the metabolism of these drugs, leading to increased anticoagulant effects and the danger of hemorrhage.

f. Anticonvulsants. A serious interaction between phenytoin (Dilantin) and alcohol is the development of cross-tolerance to this anticonvulsant drug in patients with epilepsy who are also heavy drinkers. Alcohol apparently causes accelerated removal of the drug, making normal doses inadequate. Such inhibition could increase the chances that patients will experience toxic side effects with otherwise appropriate dosages.

g. Antidepressants and Stimulants. Antidepressant drugs include a family of compounds of varying chemical structure that have the common ability to stimulate cell function.

Antidepressants can produce either synergistic or antagonistic interactions with alcohol depending on the ratio of sedative activity to stimulant activity of the drug. For example, one stimulant has a tendency to antagonize the depressant effects of alcohol, whereas another, a depressant, can potentiate alcohol's sedative effects.

In addition, antidepressants increase susceptibility to convulsions and should be administered cautiously in alcohol withdrawal. Because these drugs produce low blood pressure, they should be prescribed only for alcoholics who can be carefully monitored.

Certain alcoholic beverages such as Chianti wine and beer, which contain tyramine, present very well known hazardous effects in combination with these drugs, due to a hypertensive crisis. These drugs also slow the metabolism of alcohol, causing intoxication to be greater than expected.

h. Stimulants. Although it is logical to expect that such stimulants as caffeine and amphetamines would antagonize the depressant effects of alcohol on the central nervous system, the results of a variety of behavioral, mental, and psychomotor tests have been variable.

Overall, the expected antagonism between alcohol and stimulants occurs only sporadically and only in some selected behaviors. Both caffeine and amphetamines may have either antagonistic or synergistic action with alcohol, depending on whether alcohol is releasing inhibitions or exerting a depressant effect.

i. Antihistamines. The additive effects of alcohol-antihistamine-interactions are well known. The prominent sedative side effect of antihistamines, experienced as drowsiness, is increased to such an extent in combination with alcohol that it is dangerous to perform any hazardous task while taking the combination. Because of the impairment of alcohol-antihistamine interactions on performance skills, patients should be counseled to avoid the combination, especially when driving or operating machinery.

j. Antidiabetic Agents/Hypoglycemics. Tolbutamide and alcohol interact and cause unpredictable fluctuations in blood sugar levels. The most serious side effects are symptoms of severe hypoglycemia. Another dangerous severe alcohol-drug interaction with these products is the disulfiram-like reaction discussed above. Because of unpredictability of these reactions, patients should be cautioned about excessive intake of alcohol when taking these medications.

k. Antimicrobials/Anti-infective Agents. In combination with alcohol, some of these drugs may cause disulfiram-like reactions of nausea, vomiting, and headache, and possibly convulsions. In general, these interactions are milder than the reactions to disulfiram, and are due to the drugs' inhibition of alcohol metabolism.

l. Barbiturates. The well-known danger to human life from combined use of alcohol and barbiturates appears to result from a synergistic interaction. The lethal dose for barbiturates is nearly 50 percent lower in the presence of alcohol than it is when the drug is used alone. Blood levels of secobarbital or pentobarbital as low as 0.5 mg per 100 ml combined with blood alcohol levels of 0.1 percent can cause death from respiratory depression. In cases of severe alcohol-barbiturate intoxication, symptoms include vomiting, severe motor impairment, unconsciousness, coma, and death.

In addition to its potential for direct lethal effects, the alcohol-drug combination in sublethal doses can seriously impair skills needed for driving by increasing complex reaction times, causing some individuals to fall asleep or exhibit impaired motor skills for several hours.

Alcohol abusers who have developed tolerance to alcohol exhibit cross-tolerance to barbiturates. Some alcoholics use barbiturates to alleviate alcohol withdrawal symptoms -- an extremely hazardous practice in view of the low threshold for fatalities in the combined use of these substances.

m. The Minor Tranquilizers. Many patients use drugs from this class in combination with alcohol because they are generally unaware that tranquilizers are CNS depressants that can increase the adverse effects of alcohol on performance skills and alertness.

Alcohol acts synergistically with these drugs to depress performance tasks and driving-related skills such as in time estimation, attention, reaction time, body steadiness, oculomotor control, and alertness.

A recent report of the Institute of Medicine of the National Academy of Sciences suggests that some of these drugs used frequently as a hypnotic, remain in the body for several days. When alcohol is consumed the day after this drug has been taken, driving skills are impaired, the report said.

n. The Major Tranquilizers. The major tranquilizers are also central nervous system depressants. In combination with alcohol they produce severe, possibly fatal, depression of the respiratory center, and impaired hepatic functions that result in toxic manifestations. Use of tranquilizers to control alcohol withdrawal can be hazardous, because they increase seizure susceptibility. In addition, low blood pressure, a side effect of these drugs, can be exacerbated by alcohol. Several studies in humans indicate strongly, but not conclusively, that alcohol in combination with any of the major tranquilizers impairs driving skills.

o. Narcotics. Alcohol potentiates the depressant effects on the central nervous system of the narcotic analgesics. Although research has found increased impairment of motor activities due to synergistic effects of morphine and alcohol, no similar results appear for codeine.

Several epidemiologic studies suggest that combined use of morphine and alcohol potentiates the effects of both drugs and increases the probability of death. Although the nature of the interaction is not known, repeated exposure to alcohol appears to increase sensitivity to morphine, and vice versa. Other opiates have been reported to be involved frequently in deaths due to alcohol-drug combinations.

H. FETAL ALCOHOL SYNDROME

Alcohol, when abused during pregnancy can affect the delicate system of the unborn baby.

Recent research reports indicate that heavy use of alcohol by women during pregnancy may result in a pattern of abnormalities in the offspring, termed the Fetal Alcohol Syndrome.

Fetal Alcohol Syndrome describes infants born with a definite pattern of physical, mental and behavioral abnormalities.

Fetal Alcohol Syndrome babies are shorter and lighter in weight than normal. They may also have abnormally small heads, facial irregularities, heart defects and poor coordination.

Many Fetal Alcohol Syndrome infants are mentally retarded and show a number of behavioral problems.

Stillbirths and miscarriages are of a high frequency among women who have used alcohol heavily during pregnancy.

At present, we do not know exactly how much alcohol, consumed over what period of time, is needed to endanger the developing baby.

BUT

Based on research it is believed that a pregnant woman clearly risks harm to her baby if she drinks three or more ounces of absolute alcohol per day. (Six averaged sized drinks)

Between one ounce and three ounces, there is still uncertainty and caution is advised.

To be completely safe, the best advice is to give up drinking while you are pregnant.

Pregnant women and those likely to become pregnant should discuss their drinking habits and the potential dangers with their physicians.

I. THE PATH OF ALCOHOL IN THE BODY

(Further explanation of each area is contained in the main body of this section.) The statement numbers are keyed to the diagram on the following page.

1. Alcohol is taken into the body through the mouth and travels to the stomach via the esophagus. Alcohol, in its initial state, is in a form which can be immediately used by the body.

2. In the stomach, the alcohol is subjected to a number of chemicals. Because it is already in its simplest form, these chemicals have little affect on the alcohol. Some of the alcohol is absorbed into the bloodstream directly from the stomach, where it stimulates gastric secretion.

3. The remaining alcohol travels to the small intestine where it is absorbed into the blood.

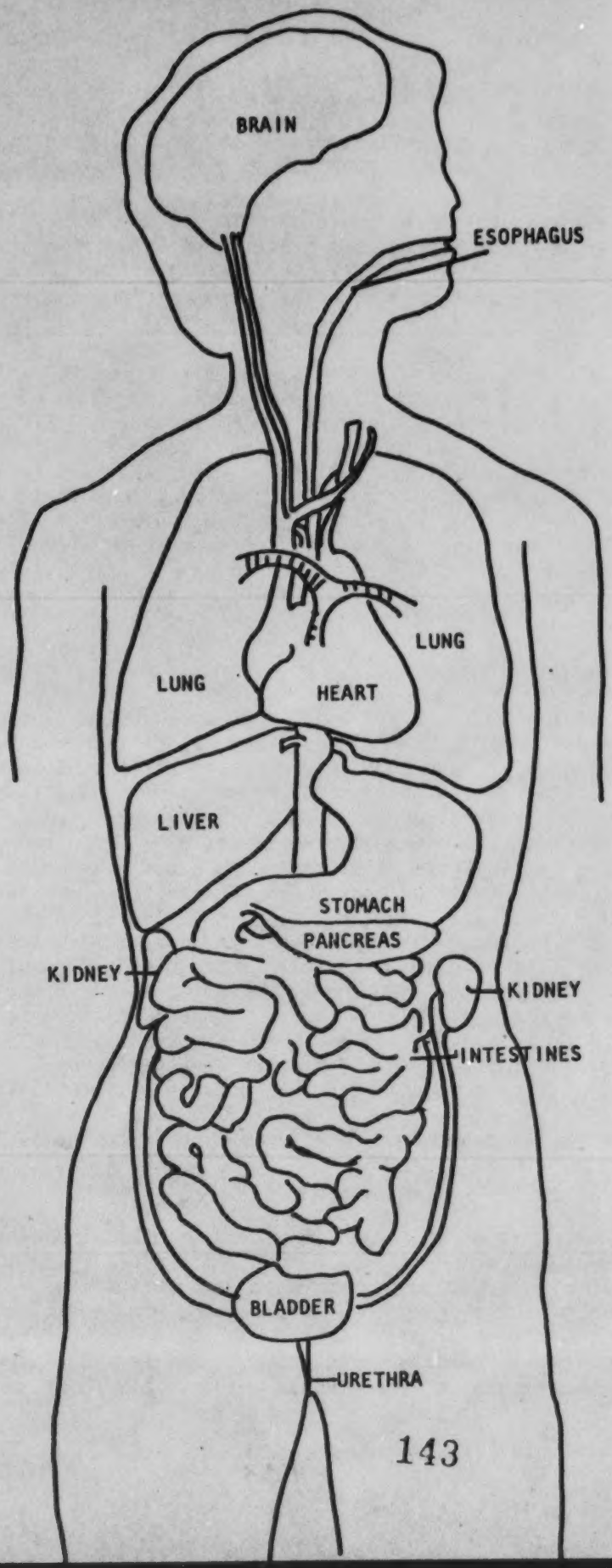
4. Once in the bloodstream, the alcohol travels to all parts of the body. It affects heart rate, blood pressure, appetite, urine output, etc.

5. Alcohol also affects the brain causing a variety of reactions ranging from relaxation to unconsciousness and death, depending on dosage.

6. In the liver, the chemical alcohol undergoes the process of oxidation, whereby it is eventually changed into carbon-dioxide, water, and a release of energy. These chemicals re-enter the bloodstream and move on to the kidneys.

7. The kidneys filter out the end products of the oxidation process, which are finally excreted out of the body.

8. About 95-98 percent of the alcohol undergoes steps 1-7; however, the remaining two to five percent escapes unchanged via sweat, the breath, and the urine.


BRAIN
ESOPHAGUS
LUNG
LUNG
HEART
LIVER
STOMACH
PANCREAS
KIDNEY
KIDNEY
INTESTINES
BLADDER
URETHRA

BEHAVIORAL EFFECTS

A. OVERVIEW

Alcohol's effects on the brain and nerve cells, and in turn on human behavior, are similar to those of chloroform or ether. The intoxicating action of alcohol affects the brain first, since the brain is highly sensitive even to very low alcohol concentrations. The disturbances which result are shown in the activities of the organs controlled by the brain.

One characteristic of alcohol is not all the nerve centers in the brain are affected by the same blood alcohol level. Some nerve centers are more resistant than others and are not affected by low blood alcohol levels. For example, the nerve centers controlling the automatic processes such as breathing are the last to be affected. The first to be affected are the centers controlling the higher functions that have been learned; among these are the inhibitions and judgment. It is always important to remember that the degree to which people are affected is not always reflected in their behavior. Because people react differently to alcohol, there is no way of telling by outward behavior how much alcohol a person has consumed.

B. DEGREES OF IMPAIRMENT

As was stated earlier, the exact process by which alcohol causes intoxication is not clearly understood. However, it is commonly assumed that alcohol works to reduce or depress the functions of nerve cells in the brain. Although the process is not known, the results of that intoxication, which we see as drunkeness, are relatively predictable. Blood Alcohol Level (BAL) is a measure used to classify a person's degree of intoxication. It refers to the ratio of alcohol to blood in the body: e.g., a blood alcohol level of .10 percent means that there is one part alcohol for every thousand parts of blood. The following blood alcohol levels are based on a 140 pound person who has consumed the alcohol over a short period of time (one to two hours). Each drink is considered to contain one ounce of alcohol, the amount contained in one can of beer, one shot of whiskey, or one glass of wine. It should be clearly understood that these blood alcohol levels and behaviors are approximations, since there are at least ten factors alone or in combination with other factors which may influence a person's response to alcohol (see Section C).

Refer to brain diagram on page 43 for the following section:

<u>One to Two Drinks</u> - (.01 to .04 BAL)

The first parts of the brain to be affected by alcohol are the outer layers of the cerebrum. The cerebrum contains the centers of association of the brain, e.g., judgment, reason and inhibitions. The depression of these centers begins to a mild degree, when the blood alcohol level reaches .01 to .04. At this stage, a person may become more relaxed and there may be a slight decrease in fine skills, but major changes in behavior are usually not observable at this point.

Three to Four Drinks - (.05 to .10 BAL)

As more alcohol enters the person's blood, its effects begin to reach deeper into the brain tissue, affecting the cerebrum. After three or four drinks, the blood alcohol level reaches .05 to .08 and begins to produce a feeling of relaxation as deeper areas are affected. At this point, some of the higher motor and sensory areas are also affected. This causes a decrease in fine skills and a reduction of the person's ability to respond and perform. People at this stage are likely to be more talkative, noisy, and moody, and to feel more alert and more capable than normal, when in actuality, there has been reduction in their reaction time, judgment, and ability to respond to emergencies. Thus, as their actual ability to perform decreases, their confidence in that ability increases.

Five to Seven Drinks - (.11 to .18 BAL)

As the blood alcohol level approaches the .09 to .15 level, the effects of alcohol extend out of the cerebrum and into the cerebellum. This area of the brain is an essential link in coordinating sensory impulses and motor activity. Alcohol's effect here is to greatly impair the person's ability to respond to stimuli. The drinker's senses of hearing, speech, vision and balance are altered. Decreased sense of pain, staggered gait, and slurred speech may also be evident.

Eight to Twelve Drinks - (.19 to .30 BAL)

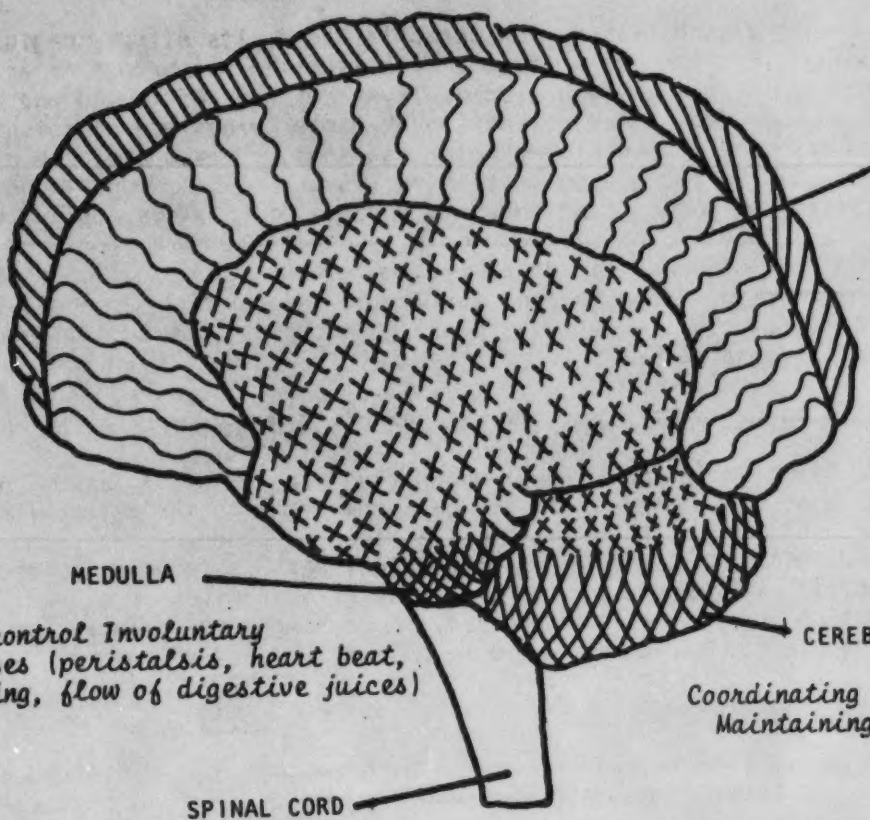
With eight to twelve drinks the blood alcohol level has reached the .19 to .30 level. The entire cerebellum, which controls perception and coordination, as well as portions of the medulla, which controls involuntary functions, may be affected. Reflexes are depressed, body temperature may decrease, and circulation is impaired. Unconsciousness may occur. At this point, gross intoxication of all physical and mental faculties is evident.

More Than Twelve Drinks - (.30 and Above BAL)

Fortunately, most people in this condition are not in a position to drink anymore. They are usually unconscious and will remain in a coma until the body has disposed of enough alcohol so that the nerve centers controlling consciousness may begin to function again. It is important to realize that drinkers in this condition are near the point of death and may die for one of two reasons if left unattended. One, if there is unabsorbed alcohol in the person's stomach, the absorption process will continue even though the person is unconscious and can build up the alcohol level in the body to the point of .40 to .50, which is enough to stop the breathing process. A second reason for death while in coma is vomiting, which may cause the unconscious person to choke. For these reasons, a drinker in a coma should never be left unattended and medical help should be found.

EFFECTS OF ALCOHOL ON AREAS OF THE BRAIN

BRAIN


CEREBRUM
Conscious or Voluntary Control Control of Reason
MEDULLA
Helps control Involuntary responses (peristalsis, heart beat, breathing, flow of digestive juices)
CEREBELLUM
Coordinating Skeletal Muscles; Maintaining balance.
SPINAL CORD
Center of reflexes below the neck

Key For Brain Diagram

*(See Pg. 41 to 42 for further explanations.)

One To Two Drinks (BAL .01 to .04)

Three to Four Drinks (BAL .05 to .08)

Five to Seven Drinks (BAL .09 to .15)

Eight to Twelve Drinks (BAL .16 to .30)

*These blood alcohol levels are based on a 140 lb. person who has consumed alcohol over a short period of time (1 to 2 hours.)

C. FACTORS WHICH INFLUENCE THE BEHAVIORAL EFFECTS OF ALCOHOL

When discussing the average effect of a given blood alcohol level on an average person, it is important to keep in mind a number of factors which influence how people respond to alcohol. These factors include: the type of alcoholic beverage, how much of it and how fast one drinks, whether one has eaten, body weight and personal body chemistry, the situation and mood one is in, one's attitudes about drinking, and one's drinking experience. (Explanations of other factors can be found on pages 27 to 28.)

Here are a few examples:

1. Situation. Often, we unthinkingly regulate our behavior when we're drinking, depending on where we are and who we're with. A young person, having dinner with a friend, may feel slightly high after one drink. But when having dinner with the boss the next night, one drink may have little or no effect. The individual is keeping a tighter grip on his/her behavior.

2. Mood. People's emotions can also affect their drinking behavior. When at ease and comfortable, they are likely to stop after feeling the relaxing effect of one drink. But at another time, when they are tense or angry, they might feel pressured to continue drinking until their minds no longer focus on their problems.

   People's reasons for drinking can actually affect their reactions to alcohol, too. Someone who is drinking to have an excuse for acting out may unconsciously exaggerate the effect that alcohol is having, while people who boast that they can hold their liquor may succeed in masking the effects of the alcohol.

3. Drinking Experience. Those who are used to alcohol recognize when it is beginning to interfere with their judgment and coordination. Certain reactions warn them when to stop drinking and when to control their behavior.

   Inexperienced drinkers do not have a clear picture of how they will react to alcohol nor have they learned to control their reactions. In fact, since they are expecting something to happen, they may purposely behave with less control. They may also be unsure of when to stop and may drink more than they can handle.

D. DEVELOPING TOLERANCE TO ALCOHOL

There are many people who believe that with practice a drinker can develop a tolerance or resistance to alcohol. They point to the fact that experienced drinkers develop the ability to "hold their liquor" without outwardly showing the effects of it. Since there are so many misconceptions about this, we need to examine more closely just what is meant by tolerance. There are two kinds of tolerance which outwardly appear the same but which actually are quite different.

Tissue Tolerance. There is some evidence that prolonged regular intake of alcohol in large doses can create what is called tissue resistance. The body's nerve centers, in a desperate attempt to keep the body processes functioning in balance, attempt to compensate for the depressant effect

of the drug. The more they compensate, the more alcohol must be taken to obtain the same degree of effect. Thus, up to a point, people can develop a resistance in their nervous systems which enable them to offset the depressant action of alcohol. In that sense, experienced drinkers will be more in command of their faculties than beginning drinkers having the same blood alcohol level. However, such tissue tolerance is developed only after prolonged drinking regularly in more than normal amounts. The average drinker does not develop this tolerance to any significant degree.

Psychological Tolerance. There is another type of tolerance which most drinkers do develop. It is called a psychological tolerance. This is a learning process, not a change in the functioning of the nerve centers as occurs in tissue tolerance. These drinkers learn to compensate for the effects of alcohol much as a sailor learns to walk across the deck of a rolling ship. They learn what to expect so that if circumstances require it, they can control their behavior and perform accordingly. For example, with concentrated affort, some people can walk a straight line even though their blood alcohol level has reached the point of seriously affecting coordination.

It is this psychological tolerance that fools people into thinking that a drinker is sober. That is why by observation alone one cannot determine to what extent alcohol has affected the faculties of a drinker. The fact that they look and act sober does not mean that they are any more capable of skilled performance than the beginning drinker who may appear intoxicated.

OTHER DRUGS

A. DRUG CLASSIFICATIONS

Drugs can be classified by a variety of systems. They can be separated in different broad categories using legal, medical, drug action, and some social systems. Some overlap does occur among these systems and as a result, there can be some confusion as to what is meant by a certain classification of drugs.

Legal Classifications

This system is used by the American legal and enforcement structure to regulate the use of dangerous drugs. According to the Controlled Substance Act, five schedules are established for controlled substances and most dangerous drugs are placed in one of those five classifications. However, a few drugs, especially socially accepted drugs, are omitted. Alcohol, reported to be the most used and abused drug in the U.S. is not listed on this schedule system so it has some limitations. A description of the five schedules follows:

- Schedule I substances. Drugs in this schedule are those that have no accepted medical use in the United States and have a high abuse potential. Some examples are heroin, marijuana, LSD, peyote, mescaline, psilocybin, the tetrahydrocannabinols, morphine methylsulfonate, nicocodeine, and nicomorphine.

- Schedule II substances. The drugs in this schedule have a high abuse potential with severe psychic or physical dependence liability. Schedule II controlled substances consist of certain narcotic drugs and drugs containing amphetamines or methamphetamines as the single active ingredient or in combination with each other. Examples of Schedule II controlled substances are: opium, morphine, codeine, methadone, pantopon, meperidine, cocaine, straight amphetamines and methamphetamines. Also in Schedule II are amobarbital, pentobarbital, secobarbital and methaqualone.

- Schedule III substances. The drugs in this schedule have an abuse potential less than those in Schedules I and II and include compounds containing limited quantities of certain narcotic drugs and nonnarcotic drugs, such as: derivatives of barbituric acid, except those that are listed in another schedule, methyprylon, chlorhexadol, phencyclidine, nalorphine, benzphetamine, and phendimetrazine. Paregoric is in the schedule as well.

- Schedule IV substances. The drugs in this schedule have an abuse potential less than those listed in Schedule III and include such drugs as: barbital, phenobarbital, methylphenobarbital, chloral hydrate, meprobamate, and phentermine.

- Schedule V substances. The drugs in this schedule have an abuse potential less than those listed in Schedule IV and consist of preparations containing moderate, limited quantities of certain narcotic drugs, generally for anti-cough and antidiarrheal purposes, which may be distributed without a prescription order.

Medical Classifications

Physicians, dentist, nurses, pharmacists and other medical professionals rely upon another classification system. Drugs are grouped according to the action of the drug upon organic tissue. Under this system, there are analgesics, anesthetics, diuretics, antibiotics, antihistamines, vaccinations, antipyretics, anti-inflammatory agents, anticoagulants, antidepressants, and so on. This system is combined with another system, the drug action system, to fill some of the gaps, such as the stimulant drugs category.

Social Classifications

Drugs can also be grouped by their source. Accoringly, there are prescription drugs, over-the-counter drugs, non-drug drugs (also, called socially accepted drugs), illicit drugs, and alternative drugs. The latter category refers to home remedies used as a substitute for a medication. An example would be milk or baking soda as an antacid. Other items considered as drugs by some professionals are poisons and food additives. Additional methods of classification in the social category are the routes of ingestion and the area of the body most affected by the drug. Also, some people refer to drugs by the disease it is intended to control, such as arthritic and cancer drugs.

Drug Action Classification

The most widely accepted method is the drug action system. By it, drugs are classified according to the action produced upon an organism's nervous system. There are five (and sometimes six) categories which are briefly described as follows:

1. Stimulants

   They increase functional activity. These stimulants include amphetamines, amphetamine-like drugs, or equivalents, as well as the so-called minor stimulants, such as the socially accepted drugs nicotine and caffeine. Cocaine, a drug which is both a stimulant and an analgesic, is generally considered as a stimulant drug. Another stimulant, ritalin, when administered to hyperactive children, produces a paradoxical result; it slows down activity like a depressant. Often stimulant drugs are used for weight control because they decrease one's appetite.

2. Depressants

   They decrease or slow down functional activity. Sometimes referred to as sedatives or sedative hypnotics, depressants include barbiturates and inhalants (volatile inhalants). They act on the nervous system to reduce anxiety and muscle tension. If taken in large volumes, they can produce sleep. Sedative hynotics are the most prescribed drugs in the U.S.

3. Hallucinogens

   They cause some degrees of distortion of reality by altering one's perception. Some professionals refer to this category as psychedelics. Included are LSD, mescaline, psyilocybin, STP, DMT, and nurmerous others.

Hallucinogens intensify emotional reactivity (with rapid swings and great lability) create a relative sense of timelessness bordering on eternity, and can shift thinking to a deep, symbolic integrative level resembling dream states. Marijuana falls into this category according to the pharmacological properties, although it is listed as a narcotic by law.

4. Narcotics

They are usually products of the opium poppy that sedate and suppress pain as well as reduce activity. Examples are heroin, morphine and codeine. Some synthetic narcotics are meperidine (Demeral) oxycodone (Percodan), and methadone.

5. Tranquilizers

They are psychotherapeutic agents used in psychiatric medicine. Basically, they are muscular relaxants which relieve anxiety and excitability. Tranquilizers are further divided into two categories, major and minor tranquilizers. Major tranquilizers act upon the human brain to control psychic thinking. Examples are meprobamate (Miltown, Equanil), chlordiazepoxide (Librium) and diazepam (Valium).

6. Volatile Inhalants

They are substances which are ingested by breathing or smelling. Most act quickly upon the tissues as a depressant, slowing down respiration and other bodily functions. A few substances, such as Nitrous Oxide and Amyl Nitrite have medical uses while most others involve recreational use. Other examples of inhalants are nail polish removers, model airplane glue, spot removers, gasoline products, and aerosol sprays.

A number of commercial products do not fall neatly in these categories. For example, most over-the-counter medications are mild forms of either stimulants and depressants. Some professionals consider this group of drugs to be a separate category of drugs. Included in this group would be laxatives, cough preparations, sleep aids, pain relievers, sedatives, and aspirin products.

B. EFFECTS OF SELECTED DRUGS

There are many ways in which different drugs can affect a person -- physically, mentally, emotionally, and behaviorally. It is vital for people to be aware of the desired effects as well as any adverse or side effects which might occur. Knowing what effects a drug might have on human functioning can assist the consumer in taking an necessary precautions (such as, not operating machinery while taking antihistamines). Below is a selection of commonly used and abused drugs and a summary of the effects on human functioning.

1. Marijuana

Marijuana and hashish are obtained from the hemp plant (Cannabis Sativa). The ingredient in cannabis that produces the typical effects on mood and perception is called THC (Tetrahydrocannabinol). Marijuana and hashish are usually smoked in either hand-rolled cigarettes or

specifically designed pipes. Hashish is usually mixed with tobacco for smoking. Cannabis preparations can also be swallowed, usually mixed in food. Smoking gives a more rapid appearance of the drug's effects than swallowing, and allows the experienced user better control over the effects.

Short-term effects are those which appear rapidly after a single dose is taken and disappear within a few hours or days.

The most common short-term effects of a small dose of marijuana are:

(a) the "high" -- a feeling of euphoria, and a tendency to talk and laugh more than usual. This is similar in many ways to mild alcohol intoxication.
(b) an increase in the pulse rate.
(c) reddening of the eyes.
(d) a later stage in which the user becomes quiet, reflective, and sleepy.

The whole experience is usally over in a few hours.

At larger doses, these effects are increased and the user may misjudge the passage of time, so that a few minutes may seem like an hour. Perception of sound, color and other sensations may be sharpened or distorted.

Cannabis impairs short-term memory, logical thinking, and the ability to drive a car or perform other complex tasks. When cannabis is combined with alcohol, barbiturates or certain other drugs, it increases their effects on thinking and behavior.

At very large doses, the effects of cannabis are similar to those of LSD and other hallucinogenic drugs. The user may feel confusion, restlessness, excitement and hallucinations. These may cause anxiety or panic, and even precipitate a true psychotic episode.

Long-term effects are those provoked by repeated use over a long period of time. Less is known about these, but the following have been described:

(a) Moderate tolerance develops -- more of the drug is needed to produce the same effect.
(b) With large doses, some of the THC remains in the body for several days. On repeated use, the level in the body builds up.
(c) About one out of 20 regular users becomes psychologically dependent on cannabis: the drug becomes so central to the person's thoughts, emotions and activities that it is extremely hard to stop using it. This, rather than physical dependence, is the real meaning of being "hooked."
(d) Heavy users of cannabis also tend to be heavy tobacco smokers. The tar content of cannabis smoke is at least 50% higher than that of tobacco. Heavy cannabis users therefore run an added risk of lung cancer, chronic bronchitis and other lung disease.
(e) Flash-backs (sudden feelings of being "high" without having taken any drug) may occur in regular users, especially those who have used LSD or other hallucinogens before. These are usually frightening experiences.

(f) Regular heavy use, especially by teenagers and young adults, may lead to loss of energy and drive, slow confused thinking, and lack of interest in any planned activity. This is called the "amoti-

vational syndrome," and usually disappears slowly when cannabis use is stopped.

2. L.S.D.

LSD (lysergic acid diethylamide) is a semi-synthetic drug derived from lysergic acid, an alkaloid found in ergot, a fungus which grows on rye and various other grains. When pure and laboratory produced, LSD is a white, odorless, liquid soluble powder made up of fine crystals. However, almost all drugs may be produced in white powder form and it is difficult to tell by sight just what drug it is. Street preparations of LSD are usually not quite white because they are often mixed with other substances or are not pure to begin with.

LSD may also be packaged in capsules, tablets, or in liquid form. In these case, it will appear in various sizes and colors.

LSD is usually taken orally but may be sniffed or injected. The street drug preparations usually range from 100 to 700 micrograms though 20-25 micrograms (i.e. 1/700,000,000 of an average man's body weight--154 lb. or 70 kg--) will produce a reaction.

Short-term effects: Generally effects are felt within an hour (if injected, even sooner) and will last from two to 12 hours. The effects of the drug do not cease all at once but taper off slowly, leaving the user with periods of feeling no effect and periods of feeling the drug working. In some cases, the effects have been known to linger several days.

Significant physical effects of LSD are almost entirely on the central and autonomic nervous system. Shortly after taking an effective dose, the user may have increased blood pressure, a rise in body temperature, dilated pupils, and a rapid heart beat. Muscular weakness, trembling, nausea, chills, numbness, loss of interest in food, and hyperventilation (breathing too deeply and rapidly) are also likely to occur. Body motor skills and coordination will be impaired. (This has been shown in tests examining driving ability under the influence of LSD.)

Significant effects on perception, thought, mood, and psychological processes are also experienced. A user of LSD may feel several different emotions at the same time or swing rapidly from one mood to another. Senses of hearing and sight might be intensified or merged.

LSD diminishes an individual's capacity to differentiate the boundaries of one object from another and of the self from the environment. For some this is a pleasant sensation but for others it may produce a panic reaction.

Sense of time may also be disturbed. Convulsions have been known to occur. Insomnia may follow even after the waning of the effects.

Depending on the severity of the reaction, short-term effects may be treated by one or a combination of the following:

a) reassurance in a supportive environment;

b) administering anti-anxiety agents;

c) administering phenothiazines;

d) induction of sleep with barbiturates.

Long-term effects:

(a) Flashbacks -- spontaneous reoccurrences of the original LSD experience without having taken the drug. This may take place days, weeks, or even many months after LSD has been taken. This may cause panic and fear and/or a need for treatment. It is particularly dangerous because these flashbacks occur without warning and might take place when a person is driving or using other machinery.

(b) May trigger mental illness -- prolonged serious depression and/or anxiety. Thinking, judgment, and perception may be distorted for weeks or months after a "bad trip".

(c) Psychological dependence may develop. This is a state in which taking the drug is so central to a person's thoughts, emotions, and activities that it is hard for him to stop.

(d) Although in humans there are no known deaths directly attributable to LSD, there have been cases of suicide, both attempted and realized.

3. P.C.P

Phencyclidine hydrochloride (PCP) is a white, crystalline powder readily soluble in water or alcohol. It has been found on the street since 1967, when it first appeared as the "PeaCe Pill". It has also been called "Hog" and "Angel Dust". Often, phencyclidine is found in various drug mixtures, e.g. LSD and PCP. As a street drug, PCP may be smoked, injected, ingested as a liquid, or taken in tablets and capsules in many sizes, colors, and dosages.

Phencyclidine is a synthetic drug, unlike any natural component of the body and chemically unrelated to either LSD or mescaline. Originally developed as an intravenous anesthetic for human use. PCP was discarded due to its considerable undesirable side-effects such as convulsions during surgery, and after-effects of delirium, visual disturbances, and agitated behavior.

In humans, phencyclidine is a difficult drug to accurately classify since it produces different kinds of effects at different dosages. The effects may resemble those of a stimulant, a pain-killer, an anesthetic, or a hallucinogen. Not all people react in the same manner to the drug, even under similar dosages. Reactions as different as stupor and euphoria have been observed in experimental studies.

The effects of phencyclidine on the nervous system vary with the dosage and with the method of ingesting the drug, as well as with other factors such as place, feelings of the user, other people present, and the user's past drug experiences. An intravenous injection of PCP will produce effects within a few minutes. In order to get the same effects by ingesting the drug orally, one would have to take more of the drug, and wait a longer period of time.

Acute effects are usually over within a matter of hours.

It has been suggested that PCP acts primarily on the sensory cortex, thalamus, and the 'mid-brain' in such a manner as to inhibit an individual's ability to integrate internal and external information. The drug seems to be able to bring out individual psychopathology which may previously have been hidden. People who have taken PCP often lose their ability to sustain directed thought and to think sequentially while affected by the drug. Frequently, individuals exhibit negative feelings or outright hostility to their surroundings.

Short-term effects: In low dosages, PCP causes a slight increase in a person's rate of breathing, and respiration becomes shallow. There is a more noticeable increase in blood pressure and pulse rate. Flushing and profuse sweating frequently follow ingestion of the drug. Generalized numbness of the extremities and muscular incoordination also occur.

After ingesting a low dosage of PCP, a user will feel distinct changes in body awareness. Feelings have been described as similar to those occurring with alcohol intoxication.

At higher dosages, there is a fall in blood pressure, pulse rate, and respiration. This is accompanied by nausea, vomiting, blurred vision rolling movements and watering of the eyes, loss of balance, and dizziness.

Large amounts of the drug can cause convulsions and coma.

At slightly higher dosages, the effects of PCP mimic certain primary symptoms of schizophrenia (a severe mental disorder). Delusions and mental confusion are common. There is a feeling of distance from one's environment. Illusions (perceiving stimuli from the external world in a distorted way) and/or hallucinations (hearing or seeing things that are not there) have been reported when high dosages of phencyclidine were adminstered intravenously.

Long-term effects: At present, little is known about long-term effects of phencyclidine resulting from frequent or repeated use over an extended period of time.

Since some of the effects of PCP and the hallucinogens are similar, one could reasonably ask whether or not similar hazards are present. In particular, the phenomenon of flashbacks (where the sensations of an LSD experience, for example, re-occur sometime after taking the drug) should be of concern.

Periods of prolonged anxiety or severe depression could also occur.

4. Psilocybin ("Magic") Mushrooms

Psilocybin occurs in about 20 species of Mexican mushrooms. Of these, Psliocybe mexicana is most commonly dried and eaten as a drug. Synthetic psilocybin is a white powder made up of fine crystals. It is made into tablets, capsules, and a liquid.

Shortly after taking an effective dose of psilocybin, a user may experience increased blood pressure, rapid breathing, rapid heart beat, a rise in body, temperature, dry mouth, diluted pupils, and some degree

of excitement. This is soon followed by a "high" feeling. Ability to concentrate or to stay in contact with reality is decreased.

There may be laughter and slurred speech, illusions and/or hallucinations (the most outstanding being visual -- e.g., in colors, shapes, and sizes), and altered perceptions of time and space. Sometimes there is emotional disturbance. If a large amount has been taken, there may be stomach upset.

Effects of psilocybin taken in tablet or capsule form usually appear in 15 to 45 minutes and may last about five or six hours, depending on dose and other factors. After injection of a solution of psilocybin, effects generally appear more quickly -- e.g., in 5 to 10 minutes.

Although the effects of psilocybin usually are shorter-lasting than those of LSD, these effects are otherwise quite similar.

5. Narcotics (Opiates)

Opium and its products (such as morphine and codeine) and its derivatives (like heroin) form the group of drugs called the opiates. These are obtained from the juice of the oriental poppy (Papaver somniferum). The opiates and synthetic drugs such as meperidine (Demarol) and methadone are often called narcotics. In medicine, narcotics are effective pain-killers both for short-term acute pain resulting from surgery or burns and for relief during the later stages of terminal illnesses such as cancer.

The opiates have been used as medicine and for pleasure since prehistoric times. Of the 20 pharmacologically active constituents of opium -- the alkaloids -- only morphine and codeine are still in wide-spread clinical use. A tincture of opium called laudanum was used for centuries to sedate, to depress coughing, and to counter diarrhea. Since the 19th century, when morphine was standardized for solution and the hypodemic needle was developed, narcotics have been commonly injected.

Heroin (diacetylmorphine) was derived in 1898 as a remedy for morphine addiction. The synthetics were in turn developed to provide an analgesic without addicting properties. As it became apparent that each new narcotic was capable of producing dependence, research began on narcotic antagonists like Natrexone. These are compounds which block the euphoric and physiologic effects of the opiates without becoming habit-forming so they have no abuse potential or black market value. During the 1960's, experiments with narcotic antagonists in the treatment of opiate dependence began. Combining these antagonists with the original narcotics offers promise of a non-addicting analgesic.

Opium itself is eaten or smoked. Opiate powders, in various colors, are usually seen in the form of capsules or tablets. Syrups, ampoules, suppositories, or elixirs are also available. While these may be sniffed, taken orally, or rectally, they are usually injected either under the skin, into a muscle, or into a vein.

Opiates briefly stimulate the higher centers of the brain, then depress activity of the central nervous system. As with all drugs, the precise effects depend on the dose and the way it is taken, previous drug experience, the setting in which it is used, and the personal characteristics of the user.

In a therapeutic setting the usual dose lasts about three to four hours. During that time, though pain is still perceived, the reaction to it is weakened. A state of contentment is achieved since the narcotic brings detachment from concern and freedom from distressing emotion when used to relieve pain. In the absence of pain such a dose may bring restlessness and discomfort.

Short-term effects are those which appear rapidly after a single dose is taken and disappear within a few hours.

An illicit drug user seeks a "rush" (a surge of pleasure) then a "fixed" state of gratification into which hunger, pain, and sexual urges do not intrude. The dose required may initially cause nausea and vomiting. With moderately high doses the body feels warm, the extremities heavy, and the mouth dry. Soon the user goes "on the nod", the alternate waking and drowsy state during which the world is forgotten. As the dose is increased, respiratory depression becomes progressively more marked; death may occur from respiratory paralysis. With very large doses the person cannot be roused, the pupils are contracted to pinpoints, and the skin is cold, moist, and bluish. On the street, where contents cannot be accurately gauged, shock effects -- falling blood pressure, coma, and heart failure -- may occur.

Long-term effects are those provoked by repeated use over a long period of time. The opiates induce physical and psychological dependence with great rapidity. The two syndromes associated with this are tolerance and withdrawal.

6. Stimulants

- Amphetamines

Amphetamine and its related drugs are central nervous system stimulants, with actions resembling those of the naturally occurring hormone, adrenaline. The best-known members of this group are amphetamine itself (e.g. Benzedrine), dextro-amphetamine (e.g. Dexedrine), methamphetamine (e.g. Methedrine), phenmetrazine (e.g. Preludin), and methylphenidate (e.g. Ritalin): Cocaine, though chemically not related to amphetamine, has actions so closely similar that it should also be included among the stimulants, even though it is legally classed as a narcotic.

In the past, amphetamines were widely used medically to treat depression, obesity, and a variety of other conditions. Now in some states, it is illegal to use amphetamines for weight control.

People also use amphetamines for non-medical purposes: to avoid sleep while studying or driving; to attempt to improve athletic performance; to counter the effects of depressant drugs.

Under the slang name "speed", amphetamines, particularly methamphetamine, have been widely used specifically for their mood-altering effects. Chronic high dose use of amphetamines by injection has been a serious social, medical, and legal problem in several countries.

Amphetamines may be taken by mouth, sniffed, or injected into the veins; it usually appears as yellowish crystals and may be mixed with other materials such as non-drug fillers. Cocaine is most commonly sniffed; but it can also be injected under the skin or into a vein.

The effects of amphetamines and cocaine, like those of adrenaline, are exerted not only on the brain but also on the heart, lungs, and many other organs.

Short-term effects, those produced by a single dose, appear rapidly after the drug is taken and disappear within a few hours. The speed and intensity of effects are greatest when the drug is injected into a vein, and lowest when it is taken by mouth. The type and duration of effects also depend greatly on the amount of drug taken.

At the low doses usually prescribed medically, the physical effects include reduction of appetite, increased breathing and heart rate, raised blood pressure, and dilation of the pupils. If larger doses are taken, dry mouth, fever, sweating, headache, blurred vision, and dizziness may occur. Very high doses may cause flushing, pallor, very rapid or irregular heart beat, tremor, loss of coordination, and collapse. Although few deaths have been reported as a direct effect of amphetamines, some have occurred as a result of ruptured blood vesse in the brain, heart failure, or very high fever. Death from cocaine overdose is usually due to convulsions or arrest of breathing.

Short-term psychological effects include increased alertness and energy, postponement of fatigue, and a feeling of well-being ("euphoria") and good mood. With increasing dose, the user may be talkative, restless, and excited, and may feel a sense of power and superiority. He may begin to do peculiar things over and over, without apparent reason. Many users become aggressive and hostile.

Long-term effects caused by repeated use of amphetamines are of two types. Some are simply exaggeration of the short-term effects, while others are quite different and occur only with prolonged use. Effects may be direct or indirect. Direct effects are those caused by the action of the drug itself on the body. Indirect effects may result from the manner of taking the drug, the lifestyle of the user, or other factors.

Direct long-term effects of amphetamines include:

(a) Tolerance -- increased doses are needed to achieve the same degree of effect. Tolerance does not develop to all effects at the same rate. It is still not entirely clear whether cocaine produces tolerance in humans, but medical observations suggest that it does.

(b) Dependence -- the user feels a compelling need to keep taking the drug. Experiments with animals have shown that when there is a free choice, amphetamines and cocaine will be used in preference to all other drugs. Animals addicted to amphetamines and then withdrawn will work very hard to get more of it, and will keep trying about twice as long as similar animals addicted to heroin and then withdrawn.

If amphetamine use is suddenly stopped, the heavy user shows withdrawal symptoms which include fatigue, long but disturbed sleep, irritability, strong hunger, and deep depression that may lead to attempted suicide. Fits of violent action may also occur. These disturbances can be temporarily reversed by taking the drug again.

(c) Amphetamine psychosis -- mental disturbance very similar to paranoid schizophrenia. It is an exaggeration of the short-term effects of high doses. Usually the symptoms disappear within a few days or weeks after the drug use is stopped.

- Benzedrine

Benzedrine is a central nervous system stimulant first synthesized in 1927. It has been issued to military personnel in the treatment of narcolepsy (involuntary sleep). The usual short-term effects are as follows:

(a) increased alertness
(b) reduction of fatigue
(c) loss of appetite

The additional short-term effects with increased dosage are:

(a) excitability
(b) tremor of the hands
(c) enlarged pupils
(d) heavy perspiration

The possible long-term effects are:

(a) high blood pressure
(b) abnormal heart rythms
(c) malnutrition
(d) skin disorders -- from frequent scratching and picking
(e) acute respiratory distress -- life-threatening choking
(f) acute abdominal pains, nausea, or vomiting
(g) serum hepatitis -- from the use of contaminated needles
(h) brain damage -- irreversible brain damage is believe to sometimes occur with prolonged use, due to malnutrition

- Caffeine

Caffeine is one of a group of drugs call zanthines, which are extracted from the resin of various plants throughout the world. Caffeine is obtained from the coffee plant and both the leaves and beans of the plant have been used in preparation of a beverage drink. An example of a commercial capsule form would be No-Doz tablets, reported to delay fatigue.

The usual short-term effects are as follows:

(a) mild CNS stimulant
    -- increased alertness
    -- allays fatigue
    -- keener appreciation of sensory stimuli
    -- mildly stimulates respiratory system

(b) kidney -- increases production of urine
(c) heart -- stimulates cardiac muscle -- force of contraction and output increases
(d) relaxes smooth muscle of bronchia
(e) constricts vascular system (at high therapeutic doses, it has the opposite effect)
(f) voluntary muscles -- increased capacity for work -- less susceptible to fatigue
(g) extra gastric secretion of acid and pepsin
(h) slight increase in metabolic rate
(i) diverts tension and anxiety
(j) pick up, pep up

The possible long term effects are:

(a) insomnia or restlessness
(b) habituation
(c) tension and nervousness leading to stomach disorders
(d) gastric irritation that may lead to ulcers

- Cocaine

Cocaine is a naturally occurring stimulant drug which is extracted from the leaves of the coca plant (Erythroxylon cocoa). Illicit cocaine is sold as a white translucent crystalline powder frequently adulterated to about half its strength by a variety of other ingredients, such as various sugars and local anesthetics. The powder can be either sniffed or injected, but usually is inhaled through the nostrils.

The usual short-term effects are as follows:

(a) stimulant of Central Nervous System -- increased alertness, often euphoric
(b) appetite depressed
(c) indifference to pain
(d) loss of fatigue
(e) rise in body temperature
(f) possible vomiting
(g) increased respiratory rate
(h) feeling of great muscular strength
(i) feeling of increased mental capacity
(j) paranoia with high dose
(k) visual, auditory, and tactile hallucinations with high dose

Some deaths are reported from the injection of cocaine.

7. Tobacco

Tobacco is the cured leaf of Nicotiana Tabecum, a plant indigenous to America but now grown in many parts of the world, that is both smoked and chewed.

Cigarette smoke consists of a mixture of particles and carbon monoxide and other gases -- nearly 500 compounds have been isolated. Nicotine is one of the most toxic of them all and the acute effects of tobacco smoking are largely due to the nicotine content.

Effects

Short-term effects: In general, the result of smoking one or two cigarettes is an increase in pulse rate, a rise in blood pressure, and a drop in skin temperature. There is also a feeling of relaxation, along with some mental lift. In some people, heart beat accelerates by as much as 40 percent. Smoking increases the release of acid into the stomach and may slow down the formation of urine. It also first stimulates and then reduces the activity of parts of the brain and nervous system. In people who inhale cigarette smoke regularly, there is some loss of appetite and a decrease in physical endurance.

Long-term effects: Cigarette smoking can act jointly with certain other factors (e.g., high blood pressure, physical inactivity, high serum cholesterol, inherited tendency) to increase risk of coronary heart disease. Regular smokers are more likely to die from cerebrovascular disease than non-smokers (where hardening of the blood vessels in the brain may lead to stroke). Cigarette smokers also run a higher risk of developing peripheral vascular disease -- a condition involving narrowing or blockage of blood vessels in the arms and legs.

Shortness of breath, cough, and excess saliva occur more frequently in smokers than in non-smokers. Respiratory infections such as chest colds and pneumonia are more common and more severe -- particularly in heavy smokers. Lung complications (e.g., infections, blood clots) occur more frequently after surgical operations on smokers. In people suffering from asthma, smoking may increase the frequency and severity of attacks.

Cigarette smoking is the most important cause of chronic bronchitis. Emphysema, a condition in which lungs lose their elasticity and retain too much air, occurs more frequently in smokers than in non-smokers. Risk of dying from these diseases is also increased by smoking.

Cigarette smoking is the main cause of lung cancer in men. It is also a cause of lung cancer in women but accounts for a smaller proportion of cases than in men. Risk of developing lung cancer increases with the number of cigarettes smoked per day, number of years one has smoked, and earliness of the age at which one started. However, if you stop smoking and if no irreversible disease has started, the lungs gradually clear themselves. Studies have shown that the average ex-smoker who has not smoked cigarettes for 10 years has about the same health prognosis and life expectancy as one who has never smoked.

Smoking is related to cancer in other parts of the body as well - for example, the larynx, mouth, and esophagus. In addition, an association is suggested between cigarette smoking and cancer of the bladder, kidney, and pancreas.

Male cigarette smokers are more likely to get stomach ulcers than non-smokers, they also have higher death rates from this condition. In addition, cigarette use slows the healing of stomach ulcers and increases the danger of complications.

Women who smoke during pregnancy tend to have smaller babies and are more likely to give birth prematurely. They also have a greater number of stillbirths, and death among their newborn babies is more common.

8. Tranquilizers

These drugs, first used in medicine in the early 1950's, are sold in tablets or capsules of various sizes, shapes, and colors. They are also available as syrups, suppositories, or in solution (for injection). There are two main types of tranquilizers: major and minor.

Major tranquilizers are most often used to treat mental patients. They have enabled many to leave hospital. Inside mental hospitals, treatment is made easier by the calmer atmosphere produced by these drugs. Most experts believe that major tranquilizers do not produce dependence.

There are many different kinds of minor tranquilizers. They are used to treat sleeplessness, anxiety, tension, pre-menstrual distress, muscular tension or pain, headache, and high blood pressure. They are also used to treat abnormally excitable children.

Many people use minor tranquilizers on a doctor's orders without ever taking too much or suffering ill effects. They are among the most widely used drugs. However, use of these drugs without medical supervision or in more than prescribed doses may cause serious harm.

Short-term effects of minor tranquilizers: Minor tranquilizers reduce the activity of parts of the brain that are involved in emotional reactions and alertness. How much this activity is reduced depends on the dose taken, the tranquilizer used, the setting or circumstances, and the person who takes it. Generally they calm tense or anxious people and make them less alert. Prescribed doses usually last three to six hours. Some people who use minor tranquilizers may get a "high" feeling, especially during the first few weeks of use. Some may get a sleepy feeling; but if this effect occurs, it tends to be short-lived.

Diazepam (Valium)

Diazepam is a minor tranquilizer effective as a sedative.

The usual short-term effects are as follows:

(a) depresseant of the Central Nervous System
(b) sleep induction
(c) drowsiness
(d) relaxation and sedation
(e) sometimes euphoria
(f) impaired judgment
(g) slower reaction time
(h) loss of coordination
(i) muscle relaxation

The usual long-term effects are the same as the short-term effects plus the following:

(a) weight loss
(b) dependence with severe withdrawal illness (like D.T.'s)
(c) activity of smooth muscles of bladder and uterus depressed
(d) decreased flow of urine
(e) impairment of liver function
(f) reduction of white blood cells

9. (Volatile) Inhalants

Volatile hydrocarbon abuse is not new. Inhaling nitrous oxide was popular during the 1800's. In this century, petroleum-based solvents have become commonplace in household and industrial use. Widespread sniffing of plastic model glues and nail polish removers began in the 1960's. Abuse of aerosol sprays (dangerous due to the toxic effects of the fluorocarbon propellant gas) is a more recent development.

Most volatile hydrocarbons act as central nervous system (CNS) depressants. CNS depressant drugs tend to slow down or decrease many body functions, such as respiration. Volatile hydrocarbon fumes rapidly enter the blood-stream after inhalation and initial effects are felt within seconds. Risk of unconsciousness increases with the concentration of fumes inhaled (larger doses), and with any physical exertion following drug use. Pressurized, high concentration aerosol sprays are particularly hazardous.

Inhaling fumes of many common products can result in intoxication which may be followed by death due to heart failure. 'Sudden sniffing deaths' most frequently occur following abuse of aerosol sprays (fluoroalkane gas), spot removers (trichloroethane, carbon tetrachloride), and model airplane cement (toluene, acetone).

Short-term effects are those which appear rapidly after inhalation and disappear within a few hours or days.

Short-term effects of volatile hydrocarbon abuse usually develop in a sequence determined by dose size (concentration of inhaled fumes):

(a) Initial 'high': euphoria, excitation, pleasant exhilaration; dizziness, visual and auditory hallucinations; sneezing, coughing, flushed skin, increased saliva, and sensitivity to light; nausea and vomiting

(b) Early CNS depression: confusion, disorientation, a feeling of dullness; blurred vision, cramps, and headache; skin pallor, loss of self-control

(c) Medium CNS depression: a dazed, drowsy feeling; muscular incoordination and slurred speech; poor (depressed) reflexes

(d) Late CNS depression: bizarre dreams, seizures stupor, delirium, and unconsciousness.

Most volatile hydrocarbon abuse does not result in unconsciousness (severe CNS depression). For the majority of users, most effects are over within an hour. Hangovers (headaches, etc.) of several days duration may follow drug use.Long-term effects are those provoked by repeated use over a long period of time. Many long term effects of volatile hydrocarbon abuse are reversible -- they will disappear if drug use is stopped. These include:

(a) Nosebleeds, bloodshot eyes, halitosis, sores on nose and mouth

(b) Pallor, fatigue, forgetfulness, lack of ability to think clearly or logically, tremors

(c) Thirst, weight loss

(d) Amnesia, depression, irritability, hostility, and paranola.

Most liver and kidney damage caused by volatile hydrocarbon inhalation is reversible (without permanent adverse effects). However, trichloroethane (found in cleaning fluids) and fluoroalkane gases (aerosol sprays) can be highly toxic to the liver and kidneys.

Permanent brain damage is rare. Volatile hydrocarbon abuse interferes with normal brain functions, but the effects are temporary in most cases.

ALCOHOLISM

According to a major study of American drinking practices, more than two-thirds of the adult population, or about 100 million people, drink alcoholic beverages at least occasionally. The majority of those who drink do so without problems, but there are others whose drinking gets out of hand, endangering themselves and those around them. This group of problem drinkers includes men and women from all socioeconomic classes, backgrounds, religions, races, and occupations.

I. DEFINITION OF ALCOHOLISM AND PROBLEM DRINKING

Professionals in the field of alcoholism research and treatment differ in their definitions of problem drinkers. Distinctions are sometimes made between individuals with drinking problems and those suffering from alcoholism--with alcoholics considered to have the more serious problem. Since the two populations are not easy to distinguish, hard and fast differentiations are rarely made.

Within our society, "problem drinking" is usually recognized as drinking to such an excess that the ability to control one's actions and maintain a socially acceptable life style is impaired.

Several behavioral criteria characterize the person who may have a drinking problem. The following list of criteria, although incomplete, presents some general indicators of problems with alcohol if a person answers "yes" to one or more statements.

1. Anyone who must drink in order to function or to "cope with life."

2. Anyone who by his/her own definition, or that of family and friends, frequently drinks to a state of intoxication.

3. Anyone who goes to work intoxicated or has lost a job due to drinking.

4. Anyone who is intoxicated and drives a car.

5. Anyone who sustains bodily injury requiring medical attention as a consequence of an intoxicated state.

6. Anyone who, under the influence of alcohol, does something he/she would never do without alcohol.

Other experts have noted that the following "warning signs" often indicate that a person is a problem drinker or in the early stages of alcoholism: the need to drink before facing certain situations, frequent drinking sprees, a steady increase in intake, solitary drinking, early morning drinking, and sometimes the occurrence of "blackouts" (a period of time in which, while remaining otherwise fully conscious, the drinker undergoes a loss of memory).

Although criteria and estimates vary considerably, it is generally though that there are about 10 million people in our country with

alcoholism problems. The definition of alcoholism varies depending on who is asked. However, most definitions include components similar to the following:

1. Loss of control of alcohol intake--the victims find themselves drinking when they intend not to drink, or drinking more than they planned;

2. Presence of functional or structural damage--physiological, psychological, domestic, economic, or social;

3. Use of alcohol as a kind of universal therapy, as a psycho-pharmacological substance through which the person tries to keep his/her life from disintegrating.

These components are expanded in the set of criteria for the diagnosis of alcoholism (too lengthy to include here) compiled by a committee of medical authorities from the National Council on Alcoholism. They are divided into two major sections: (1) Physiological and Clinical and (2) Behavioral, Psychological and Attitudinal.

The Washington State Council on Alcoholism describes alcoholism as "a complex, progressive disease in which the use of alcohol interferes with health, social and economic functioning. Untreated, alcoholism results in physical incapacity, permanent mental damage and/or premature death. The onset of the disease varies widely and may appear at the first drink or may take years to develop."

Whatever the definition used, or the precise number of individuals affected, the population of alcoholic and problem drinkers is sufficiently large to warrant attention as a major public health problem in the nation.

A. The Alcoholic Stereotype

To many people, the notion of an alcoholic conjures up visions of the typical Skid Road derelict: homeless, unkempt, unemployed and unemployable, sprawled on the sidewalk in a drunken stupor. Yet investigation has shown that the people of Skid Road (of whom approximately 50% are alcoholics) make up a tiny fragment of the entire population of alcoholic and problem drinkers--probably less than five percent. At least 95 percent of the problem population consists of employed or employable, family-centered individuals. It has been estimated that more than 70 percent of them reside in respectable neighborhoods, live with their husbands or wives; try to send their children to college, belong to a country club, attend church, pay taxes, and continue to perform more or less effectively at their jobs. For a discussion of alcoholism and problem drinking among teenagers, refer to the chapter on Teenage Drinking.

Although estimates vary, it is thought that there are more male alcoholics than females; however, the proportion of female alcoholics has been steadily rising. Some authorities feel that the number of male and female alcoholics is about equal, but that women have had a greater tendency to hide the disease and avoid treatment, causing the difference in statistics. More research is being conducted on female alcoholism.

II. CAUSES OF ALCOHOLISM

As laboratory and clinical data have become more refined, it has become evident that there are many kinds of drinking problems, many types of people who have them, and many reasons why they begin and continue to drink to a harmful degree.

A 1963 survey found that the percentage of problem drinkers was highest in the western part of the United States, among males, residents of the larger cities, the divorced or unmarried, those with the least and those with the most education, and those with the lowest and those with the highest vocational status. The lowest rates were found among Lutherans, Congregationalists, Presbyterians, Episcopalians, and Jews. Findings from this survey also suggest that drinkers from groups in which drinking is relatively uncommon may be the most likely to encounter trouble because of their drinking. Other research indicates that children who come from homes where parents are either teetotalers or alcoholics have a higher risk of becoming alcoholics than children of parents whose attitudes and behavior are less extreme.

In a 1965 survey of American drinking practices, it was found that whether a person drinks at all depends primarily on social and cultural factors, but psychological factors appear to determine whether or not one will become a "heavy escape drinker" -- one who drinks heavily, and uses drinking as a means of escaping from tensions, problems, and depressions. The population of heavy escape drinkers, about nine percent of all drinkers, contains those most likely to be or become alcoholics and problem drinkers.

The search for a unitary cause of alcoholism has shifted to inter-disciplinary exploration of factors that might, singly or in combination, account for the development of problem drinking in various types of individuals. Although there is no generally agreed-upon model of how alcoholism starts, research into the physiological, psychological, and sociological factors has resulted in a far greater understanding of the conditions that may precede, underlie, and maintain problem drinking. The state of knowledge is still quite crude. There have, however, been several promising leads which may ultimately contribute to better prediction and protection of individuals likely to develop alcohol problems, and to improved treatment techniques for those already ill.

A. Physiological Theories

Despite considerable research effort to find physical factors, either in alcohol itself, or in the biological makeup of those who drink, which could account for alcoholic drinking and addiction, to date, many of the questions remain unsolved. Some of the proposed theories are presented here for consideration, including the genetic, endocrine, and genetotrophic theories.

1. Genetic Theory

Some workers in the field theorize that alcoholism may be inherited. Alcoholism appears to run in families; it is, therefore, suggested that an alcoholism prone individual may have inherited a susceptibility to be influenced adversely by

ingested alcohol. Research has provided some evidence to support this theory. The possibility that humans may inherit a predisposition for alcoholism or an immunity to it does not rule out other factors also contributing to its occurence in a positive or negative manner. Thus, the development of alcoholism may be the result of a collection of factors rather than just one.

2. Endocrine Theory

Another physiological theory of the cause of alcoholism indicates a dysfunction of the endocrine system. Similarities between the symptoms seen in alcoholic patients and in patients with endocrine disorders suggest that some failure of the endocrines might be causally related to the onset of alcoholism. If alcohol ingestion stresses the organism, chronic heavy drinking could cause a hyperactivity of the pituitary gland, eventually exhaustion of the adrenal cortex, and consequently, a breakdown in the functions regulated by the adrenal hormones.

As with other theories, the experimental clinical evidence to date is not conclusive. The available information suggests that the endocrine characteristics associated with alcoholism may be a result of chronic heavy drinking rather than its cause.

3. Genetotrophic Theory

The genetotrophic theory of alcoholism combines the concept of a genetic trait and nutritional deficiency. It is postulated that, due to an inherited defect or "error" of metabolism, some people require unusual amounts of some of the essential vitamins. Since they do not get these unusual amounts in their normal diet, they have a genetically caused nutritional deficiency. Those who drink alcohol develop an abnormal craving for the substance, and the consequence is alcoholism.

4. Other Physiological Theories

Other physiological theories about alcoholism include factors such a allergies, differing metabolic rates, and non-alcoholic components of alcoholic beverages (congeners). Although there is a theoretical basis for each, the scientific evidence does no yet exist to support them conclusively.

A study by Dr. Charles Lieber and Associates indicates there is something different about the way an alcoholic's body reacts to alcohol and this may be connected with addiction and the physical damage that often results. Acetaldehyde, a metabolic product of alcohol, reaches a higher level in alcoholics and stays there longer than it does in social drinkers, even when the two groups have the same blood alcohol levels. It isn't clear whether the difference precedes or follows the alcoholism. But the build-up of acetaldehyde may account for some of alcohol's damage to vital organs. It also suggests that some basic physical difference may be part of the explanation of why some drinkers become alcoholic when others do not.

In summary, it is generally held that physiological factors probably contribute to the development of alcoholism, but none has yet been conclusively proven to be the single cause.

B. Psychological Theories

Some researchers believe that individuals with alcohol problems possess a number of distinctive traits which together make up the "alcoholic personality." However, there is no agreement on the identity of these traits, nor on whether they may be the cause or the result of excessive drinking. Five approaches to the psychological cause of alcoholism are explained in this section: the psychoanalytic theory, the learning theory, the personality trait theory, transactional analysis and reality therapy.

1. Psychoanalytic Theory

Psychoanalytic explanations of the causes of alcoholism rest on three major theoretical positions: (a) the Freudian view; (b) the Adlerian view; and (c) the view that alcoholism develops as a response to an inner conflict between dependency drives and aggressive impulses.

The Freudian view as expressed by a number of people relates alcoholism to such factors as repressed urges, oral dependency, need for security, self-punishment and parental hatred.

The Adlerian view is that alcoholism represents a striving for power, which compensates for a pervasive feeling of inferiority. It is assumed that alcoholics derive their feelings of inferiority from a childhood in which overindulgent parents did not permit them to learn how to cope with the problems of adult life. The alcoholic turns to alcohol to enhance his/her feelings of self-esteem and prowess.

Other studies suggest that frustrated ambitions may play a role in the development of an alcohol problem. It is suggested that alcoholics may have an enhanced need for power, but find themselves inadequate to achieve their goals. They resort to alcohol because it provides a sense of release, or power, and feelings of achievement. Since overindulgency in alcohol precludes effectively coping with the existing problems and leads to additional problems, this vicious cycle results in confirmed alcoholism.

Evidence to support the psychoanalytic views is inconclusive, since it is difficult to devise experimental tests of these theories. Nevertheless, in some cases, the application of psychoanalytic ideas in the treatment of alcoholism has been successful.

2. Learning Theory

Learning and reinforcement theory explains alcoholism by considering alcohol ingestion as a reflex response to some stimulus and as a way to reduce an inner drive such as fear or anxiety. This theory holds that persons tend to be drawn to pleasant situations or repelled by unpleasant or tension-producing ones.

In the latter case, alcohol ingestion is said to reduce the tension or feelings of unpleasantness and to replace them with a feeling of well-being or euphoria.

The obvious troubles experienced by alcoholics might appear to contradict the learning theory in the explanation of alcoholism. The discomfort, pain, and punishment they experience should presumably serve as a deterrent to drinking. The fact that alcoholics continue to drink in the face of family discord, loss of employment, illness, and other sequels of repeated bouts is explained by the fact that alcohol has the immediate effect of reducing tension while the unpleasant consequences of drunken behavior come only later.

The role of punishment is becoming increasingly important in formulating a cause of alcoholism based on the principles of learning theory. While punishment may serve to suppress a response, experiments have shown that under some circumstances it can serve as a reward and reinforce the behavior. Thus, if the alcoholic has learned to drink under conditions of both reward and punishment, either type of condition may precipitate renewed drinking.

Ample experimental evidence supports the hypothesis that excessive alcohol consumption can be learned. However, since conflicting studies exist, the learning theory requires further research.

3. Personality Trait Theory

Psychological research has also attempted to define the causes of alcoholism in terms of an "alcoholic personality." Though it is conceded that all alcoholics need not have the same characteristics, it is postulated that in the prealcoholic stage, a personality pattern or constellation of characteristics should be discernible and should correlate with a predisposition toward alcoholism. One of the main difficulties in this approach is that the population ordinarily available for study is already in trouble with alcohol. The question, is whether the personailty traits observed in these peopel predate the onset of alcoholism, or are a consequence of alcoholism.

Using objective and projective tests, researchers have attempted to identify an underlying personality disorder. As yet, these approaches have failed to identify a common personality structure of the alcoholic patient which would be predictive of alcoholism. There is evidence that alcoholic patients exhibit some personaility traits in common. Once the addiction has been established, these patients show some common behavioral and trait manifestations which appear to be more relevant to alcoholism than to other psychological disorders.

4. Transactional Analysis

According to this thesis, the origins of alcoholism lie in the alcoholic's childhood conditions and his responses to them. He/she develops a lifestyle to compensate for his/her feelings of being "not O.K.", developing ways through alcohol to tune out and tune in.

5. Reality Therapy

This theory was developed by William Glasser. He believes all humans have two basic needs: to love and be loved and to feel that we are worthwhile to ourselves and others. Failure to fill these needs leads to pain. People use alcohol to remove the pain and then become addicted.

C. Sociological Theories

Alcohol serves vastly different functions within and among societies, cultures, subcultures, ethnic and religious groups. Attitudes concerning its use range from extreme permissiveness to absolute abstinence. But abstainers can always be found when permissiveness is the watchword, and, conversely, drinking does not disappear when abstinence reigns. The purposes for which alcohol is used include religious, culinary, psychic, ceremonial, hedonistic, traditional, social and medicinal ones. Standards of acceptability applied to the manner or pattern of drinking vary according to the age, occasion, sex, cultural background, social class and the particular circumstances.

1. Cultural Theory

The cultural theory of alcoholism suggests that within a given society, there are three ways in which the culture may influence the rate of alcoholism:

a. The degree to which the culture operates to bring about inner tensions or acute needs for adjustment in its members;

b. The attitudes toward drinking the culture produces in its members;

c. The degree to which the culture provides suitable substitute means of satisfaction.

Societies may provide alternatives to or substitutes for alcohol use. Some societies have less stringent sanctions against narcotic drugs and therefore have a lower alcoholism rate. Others permit emotional outlets through ceremonies and rituals and thereby provide culturally accepted means of anxiety reduction.

2. Deviant Behavior Theory

Depending on the context, the use of alcohol can be illegal or only illegitimate . . . acceptable or even sanctified . . . . forbidden or abominated. Thus, the concept of alcohol abuse as deviant behavior is receiving increasing attention by researchers. The deviant behavior theory represents the alcoholic as someone who, through a set of circumstances, becomes publicly labeled a deviant and is forced by society's reaction into playing a deviant role.

D. Summary of Causes of Acoholism

The search for a single cause of alcoholism may be an unrealistic goal. Nevertheless, researchers with specialized interests, and with needs to define alcoholism from their own perspectives, will probably continue to look for a unitary answer to solve the problem of how alcohol addiction occurs and to identify the crucial factors associated with its onset and progression.

Many theorists, however, suggest a multifaceted approach which incorporates elements from two or more hypothesis. Generally, such an approach selects from each of the broad areas discussed: physiology, psychology, and sociology.

An individual who (1) responds to beverage alcohol in a certain way, perhaps physiologically determined, by experiencing intense relief and relaxation; and who (2) has certain personality characteristics, such as difficulty in dealing with and overcoming depression, frustration, and anxiety; and who (3) is a member of a culture that induces guilt and confusion regarding what kinds of drinking behavior are appropriate, is more likely to develop trouble than will most other persons.

More research will have to be done to gain deeper insight into the causes of alcoholism. Work is needed to identify better the association between alcohol use and all aspects of physiological responses, predispositions and attitudes, and the social context and consequences of drinking.

III. SYMPTOMS OF ALCOHOLISM

As stated earlier, the difference between "problem drinkers" and "alcoholics" is usually a matter of degree rather than substance. The progression of the illness can be divided into three phases: Early, Middle, and Late, each with fairly distinct symptoms. The chart on page 70 indicates these symptoms, some of which are further explained in the following section.

A. Early-Stage Alcoholism

Regardless of the cause of alcoholism, most alcoholics in the early stage exhibit some of the characteristics explained in the section on problem drinkers (page62). These include: constant relief drinking, increase in alcohol tolerance, sneaking drinks, urgency of the first drink and pre-occupation with alcohol, feeling of guilt over drinking, avoiding any reference to drinking and in some people, memory blackouts increase or begin.

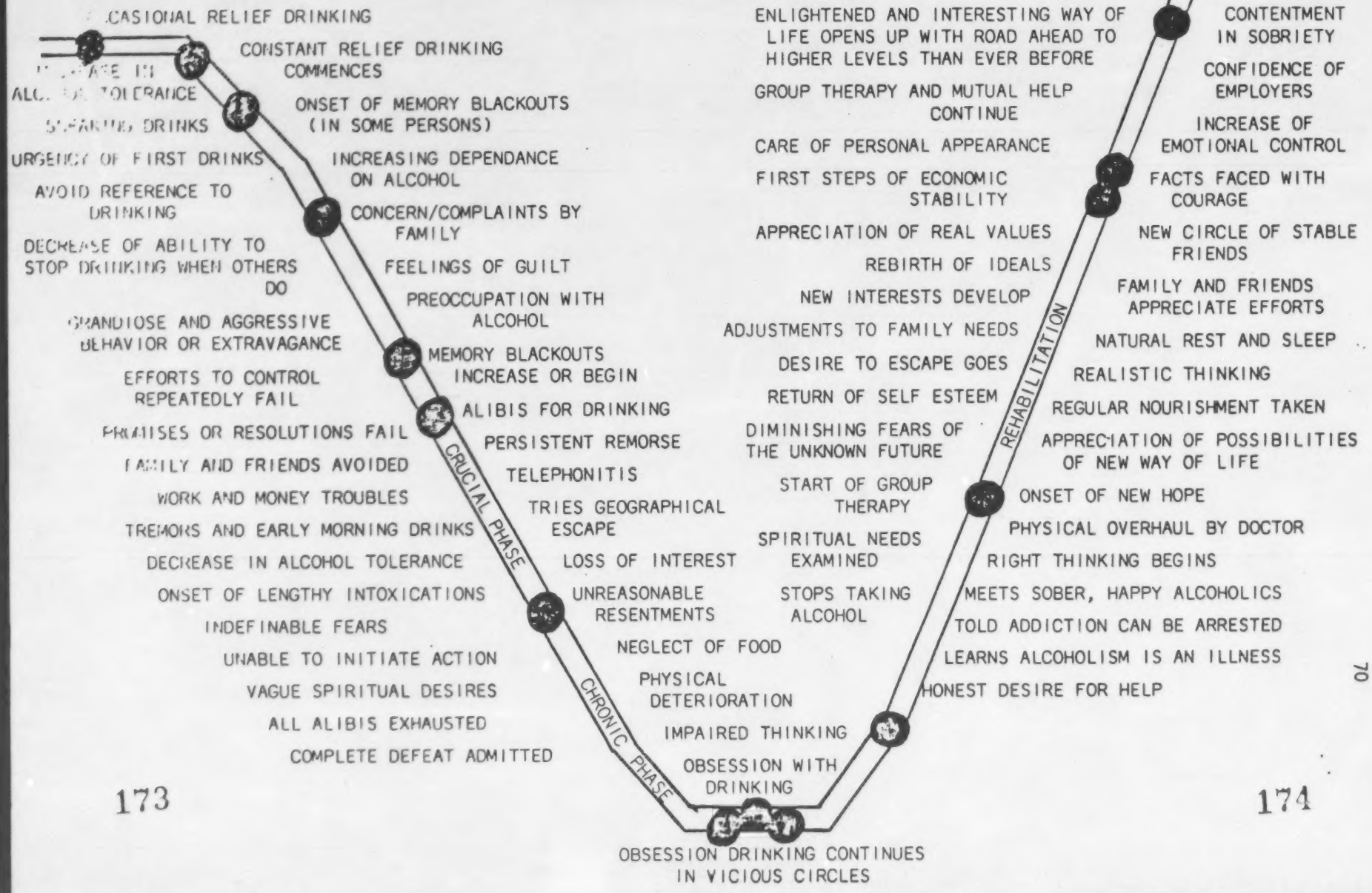
B. Middle-Stage Alcoholism

As the problem progresses, the symptoms of middle-stage alcoholism begin to appear. These may include:

Loss of control: The person may not be able to refuse a drink or stop drinking once he/she starts.

ALCOHOL ADDICTION

READ FROM LEFT TO RIGHT


OCCASIONAL RELIEF DRINKING
CONSTANT RELIEF DRINKING COMMENCES
INCREASE IN ALCOHOL TOLERANCE
ONSET OF MEMORY BLACKOUTS (IN SOME PERSONS)
SECRETIVE DRINKS
URGENCY OF FIRST DRINKS
INCREASING DEPENDANCE ON ALCOHOL
AVOID REFERENCE TO DRINKING
CONCERN/COMPLAINTS BY FAMILY
DECREASE OF ABILITY TO STOP DRINKING WHEN OTHERS DO
FEELINGS OF GUILT
PREOCCUPATION WITH ALCOHOL
GRANDIOSE AND AGGRESSIVE BEHAVIOR OR EXTRAVAGANCE
MEMORY BLACKOUTS INCREASE OR BEGIN
EFFORTS TO CONTROL REPEATEDLY FAIL
ALIBIS FOR DRINKING
PROMISES OR RESOLUTIONS FAIL
PERSISTENT REMORSE
FAMILY AND FRIENDS AVOIDED
TELEPHONITIS
WORK AND MONEY TROUBLES
TRIES GEOGRAPHICAL ESCAPE
TREMORS AND EARLY MORNING DRINKS
DECREASE IN ALCOHOL TOLERANCE
LOSS OF INTEREST
ONSET OF LENGTHY INTOXICATIONS
UNREASONABLE RESENTMENTS
INDEFINABLE FEARS
NEGLECT OF FOOD
UNABLE TO INITIATE ACTION
PHYSICAL DETERIORATION
VAGUE SPIRITUAL DESIRES
IMPAIRED THINKING
ALL ALIBIS EXHAUSTED
OBSESSION WITH DRINKING
COMPLETE DEFEAT ADMITTED
CRUCIAL PHASE
CHRONIC PHASE
OBSESSION DRINKING CONTINUES IN VICIOUS CIRCLES
ENLIGHTENED AND INTERESTING WAY OF LIFE OPENS UP WITH ROAD AHEAD TO HIGHER LEVELS THAN EVER BEFORE
GROUP THERAPY AND MUTUAL HELP CONTINUE
CARE OF PERSONAL APPEARANCE
FIRST STEPS OF ECONOMIC STABILITY
APPRECIATION OF REAL VALUES
REBIRTH OF IDEALS
NEW INTERESTS DEVELOP
ADJUSTMENTS TO FAMILY NEEDS
DESIRE TO ESCAPE GOES
RETURN OF SELF ESTEEM
DIMINISHING FEARS OF THE UNKNOWN FUTURE
START OF GROUP THERAPY
SPIRITUAL NEEDS EXAMINED
STOPS TAKING ALCOHOL
REHABILITATION
CONTENTMENT IN SOBRIETY
CONFIDENCE OF EMPLOYERS
INCREASE OF EMOTIONAL CONTROL
FACTS FACED WITH COURAGE
NEW CIRCLE OF STABLE FRIENDS
FAMILY AND FRIENDS APPRECIATE EFFORTS
NATURAL REST AND SLEEP
REALISTIC THINKING
REGULAR NOURISHMENT TAKEN
APPRECIATION OF POSSIBILITIES OF NEW WAY OF LIFE
ONSET OF NEW HOPE
PHYSICAL OVERHAUL BY DOCTOR
RIGHT THINKING BEGINS
MEETS SOBER, HAPPY ALCOHOLICS
TOLD ADDICTION CAN BE ARRESTED
LEARNS ALCOHOLISM IS AN ILLNESS
HONEST DESIRE FOR HELP

THE ROAD TO RECOVERY

Alibi system: The person feels guilty and defensive about his/her lack of control, and develops an elaborate system of 'reasons' for drinking, partly to answer family and associates, but mostly to reassure himself/herself.

Eye openers: The need for a drink in the morning to "start the day right." This 'medicinal' drink helps kill the effect of increasingly painful hangovers, feelings of guilt, remorse, and depression.

Changing the pattern: Under pressure from family or employer, the drinker tries to break the hold alcohol has on him or her, by setting up rules on when or what he/she will drink. But just a little alcohol may start the chain reaction again.

Anti-social behavior: The person prefers drinking alone, or with other alcoholics, whatever their social level, broods over imagined wrongs, thinks people are staring at or talking about him/her, is highly critical of others, and may become destructive or violent.

Loss of job and friends: Continuing anti-social behavior results in the loss of jobs, and leads friends to turn away. As a defensive measure, the person may quit before being fired, or drop his/her friends first.

Seeking medical aid: Physical and mental erosion caused by uncontrolled drinking leads the person to make rounds of hospitals, doctors, psychiatrists, seldom receiving lasting benefits because of the refusal to cooperate or admit extent of drinking.

C. Late Stages

Until this point, the alcoholic had a choice: to drink or not to drink, though once begun, they had no control of their drinking. In the later stages of alcoholism there is no choice: alcoholics must drink however and wherever they can. The symptoms of this stage include:

Benders: Drinks for days at a time, becoming completely intoxicated. Disregards family, job, even food and shelter.

Tremors: Develops the 'shakes,' a condition resulting in shaking primarily of the hands, although any part of the body may be involved. This is a symptom of the abstinence syndrome or withdrawal reaction from alcohol in a person physically addicted to the drug.

Protecting the supply: Having a supply of alcohol available becomes increasingly important. The alcoholic will do or sell anything to get it, and will hide the bottles to protect them for future needs.

Unreasonable resentments: Shows hostility to others, both as possible threats to the liquor supply and as a turning outward of an unconscious desire to punish self.

Nameless fears and anxieties: Constantly afraid of something which cannot be pinned down or even put into words. Feels a sense of impending doom and destruction. Nervous, shaky, and unable to face life without the support of alcohol.

Collapse of the Alibi system: No longer able to make excuses or put the blame on others. Admits to self that one's drinking is beyond his/her ability to control.

It is important to bear in mind the idea that not all alcoholics will exhibit all of these symptoms, and each person may exhibit any given symptoms to a greater or lesser degree than someone else. Nor is it possible to categorically state that if a person exhibits X number of symptoms, then he or she is an alcoholic. However, it is equally important to realize that these symptoms are signs of an illness which can and has had a drastic effect on individuals, families and society.

Researcher Jane James in her article, "Symptoms of Alcoholism in Women" indicated that alcoholism symptoms were different at different stages for women and men. For example, gulping and sneaking drinks which are early danger signs, didn't appear in the women she studied until they "hit bottom." Additional research on women and alcohol is underway.

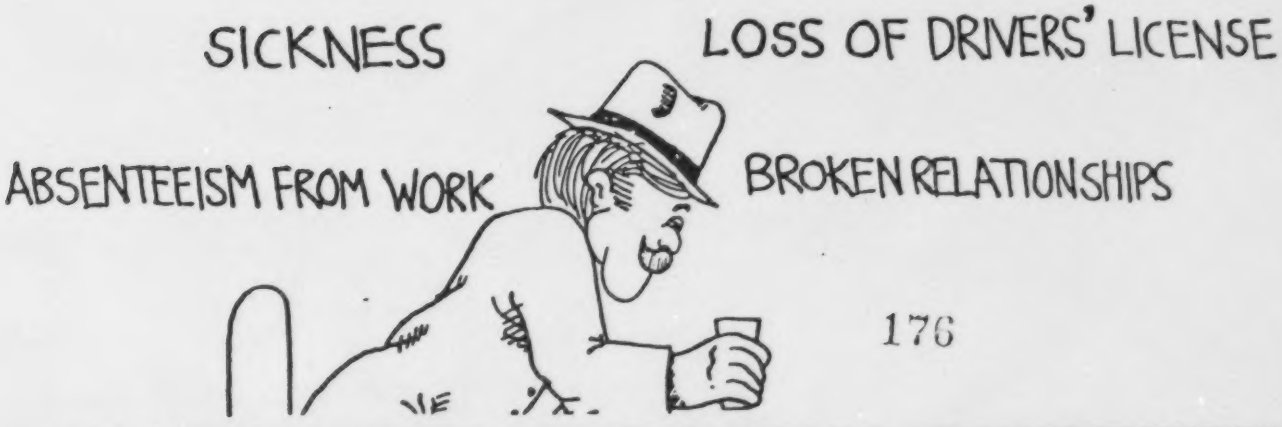
In summary, the demonstration of any symptom, from pre to late stage, should serve as a warning sign that a problem may exist which requires some form of treatment. The earlier in the process treatment starts, the more successful it is likely to be.

IV. EFFECTS OF ALCOHOLISM

A. Effects on the Individual

The men and women who have drinking problems comprise a small proportion of the total American population, but the misery created for themselves and others is enormous.

Many of the effects of the disease on the individual have already been discussed under "Symptoms of Alcoholism" in this chapter and in the "Effects of Alcohol" chapter, including: shortened life span, malnutrition, loss of job, family, friends, etc.



B. Effects on the Family

Alcoholism has been called the family disease because every member in the family, as well as the alcoholic, is affected by it.

In most cases, the family of the alcoholic has been struggling with the problem long before employers, friends, etc. are aware of it. The relationship between the spouses deteriorates steadily. A typical pattern is for the family to deny the problem exists, then when it can no longer be denied, attempt to eliminate it by withdrawing from social contacts, cutting off the supply of liquor or throwing it out, calling the police, trying to force the alcoholic into treatment, etc. If the situation does not improve, separation or divorce may follow.

A family with an alcoholic parent cannot provide the steady sense of security, love and warmth necessary for adequate development of children. As a result, children from such homes often lack necessary role models, trust and confidence in themselves and others. Discipline is inconsistent at best, or even nonexistent. The children often find themselves put in the middle of their parents' quarrels and may even blame themselves for the quarrels or drinking. They may be asked to assume more responsibility at home than their peers. When children become aware of the social stigma surrounding alcoholism, they often feel different, isolated, ashamed, and do not want to go out as a family or invite playmates to their home. The effect of an alcoholic mother on the children can be more serious than that of an alcoholic father, since she usually drinks at home and the children have to bear the brunt of her behavior changes. Physical and/or emotional neglect or abuse can result.

Children of alcoholics have a high frequency of alcohol misuse, antisocial behavior, neurotic symptoms and psychosomatic complaints. A variety of complex factors may interact to produce disturbances in these offspring, including the personality characteristics of both the alcoholic and nonalcoholic parent, family disorganization, the sociocultural position of the family and possibly a genetic predisposition to alcoholism. The effect of psychosocial and genetic factors on the high incidence of alcoholism within families is currently the subject of considerable debate among researchers.

Alcoholism creates financial problems since most available money is spent on alcohol, not food, clothing, etc., which the family needs. If the alcoholic loses his/her job, the situation becomes even more serious.

C. Effects on the Society

A variety of social consequences have been attributed to alcohol abuse. According to the Third Special Report to Congress on Alcohol and Health half of all traffic fatalities and one-third of all traffic injuries are alcohol related. Forty percent of fatal

industrial accidents, sixty-nine percent of drownings, eighty-three percent of fire fatalities and seventy percent of fatal falls are alcohol related. More than one-third of all suicides involve alcohol. Studies show a relatively high involvement of alcohol in robbery, rape, assault, and homicide. Where crime is alcohol-related, there are often both a drinking offender and a drinking victim.

The economy is affected in various ways by alcoholism. The Third Special Report estimated that in 1975 alcoholism cost the U.S. society more than $42 billion dollars. This figure includes:

ECONOMIC COSTS OF ALCOHOL MISUSE AND ALCOHOLISM, 1975

(from Alcohol & Health 3)	Billions of Dollars
Lost Production	$19.64
Health and Medical Costs	12.74
Motor Vehicle Accidents	5.14
Violent Crime	2.86
Social Responses	1.94
Fire Losses	9.43
	$42.75 billion

V. TREATMENT OF ALCOHOLISM

There is no known cure for alcoholism. The illness can be arrested, however, through treatment programs, and the alcoholic can learn to lead a healthy and productive life without alcohol. Current research indicates that no one approach to recovery is successful with all alcoholics. Many therapists believe the goal of treatment is complete abstinence from alcohol, in any form and under any condition, for the rest of the patient's life in order to arrest the illness. Research is being conducted currently to determine if a return to social drinking might be possible for some individuals. In any case, each person has to be treated as an individual and a treatment program chosen to fit his/her needs.

Patients may need to progress through three general stages of treatment:

1) managing acute intoxication and withdrawal to overcome the effects of drunkenness, to safely rid the body of alcohol and to help the body adjust to doing without alcohol (detoxification);
2) correcting the chronic health problem that may have been brought on or aggravated by heavy drinking.
3) altering long-term behavior so that destructive drinking patterns are not continued.

Some of the major approaches to alcoholism treatment will be presented in the following sections.

A. Detoxification

Concerted interest has been evident for some time in the development of new detoxification methods, partly because of the realization that the detoxification schemes of the past were inadequate. Detoxification can be an effective first step in engaging alcoholics in a successful rehabilitation effort, and most detoxification programs do not require expensive and elaborate medical facilities. The usual procedure is to give the patients medicine that will prevent convulsions, produce a healthy appetite and sound sleep. A diet rich in vitamins and other nutrients is prescribed. Most patients do not need to go through inpatient detoxification before they start other long-term treatment for alcoholism. The major problem in detoxification programs is not medical management but rather triage into rehabilitation systems and the provision of social supports. To date there has been understandable reluctance to separate detoxification services from medical facilities. Progress has been made, however, in distinguishing between alcoholics who require intensive medical care and those who require only nursing care or supervised observation. Thus, there now seem to be three useful types of detoxification: intensive medical care, supervised observation in specialized centers, and ambulatory care. Recognition of this triad of possibilities should lead to greater flexibility and cost-effectiveness and more appropriate services in detoxification programs.

B. Drug Therapy

Once over the acute stages of intoxication or withdrawal, the alcoholic starting long-range treatment may require a kind of pharmacological bridge over the difficult early days or weeks. For this, physicians may prescribe a variety of treatments.

Tranquilizers are often used to produce relaxation and to reduce the tensions which many alcoholics believe to have triggered their drinking bouts. They are highly effective, but some alcoholics eventually become addicted to the very tranquilizers which helped them break away from their dependency on alcohol. Because of this, most authorities are reluctant to use tranquilizers except in an in-patient center.

Other physicians use what is somteines called conditioned-response or aversion therapy, administering an alcoholic beverage and at the same time a powerful nausea-producing agent like emetine or apomorphine. Repeated treatments with such a combination are intended to develop a conditioned reflex loathing for alcohol in any form. Because of the risk of severe physical reactions, this method of treatment as with others, requires close medical supervision.

More widely known and used are so-called deterrent agents such as disulfiram (Antabuse). A patient regularly taking one of these compounds finds that ingestion of alcohol in any form quickly produces pounding headache, flusing, and usually violent nausea, vomiting and other unpleasant symptoms. The hope is that this kind of reaction or even the fear of it, will keep a drinker from reaching for the first sip.

An important aspect of drug therapy, however, is the general nature of the drug-giving and receiving transaction. It has been suggested

that the "image" of a drug therapy program may be a beneficial way to deal with some types of alcoholic patients. They can relate to a medical model of illness and experience a low level of emotional interaction with medical personnel. The sense of "being treated," by being given medicine, may lead to a good therapeutic relationship with positive outcomes.

C. Psychotherapy

Broadly, psychotherapy is a label covering various kinds of self-examination, counseling and guidance, in which a trained professional works with (rather than on) patients--alone or in groups--to help them change their feelings, attitudes and behavior in order to live more effectively.

Although there are variations, the psychotherapeutic approach in the case of alcoholism usually involves an attempt to bring about acceptance of an alcoholic, by the patient and by the therapist, as a person who is sick but not evil, immoral or weak, and an equally complete acceptance by the patient of the idea that he/she needs help. An effort is made to achieve understanding of the patient's underlying tensions as well as the more obvious problems, to alleviate or solve those problems that can be readily handled, and to find a means--other than drinking--which will enable the patient to live with those problems that cannot be solved.

Most successful therapists, however, may differ on details of treatment, but indicate that pleadings, exhortations, telling patients how to live their lives, or urging them to use more willpower, are usually useless and may be destructive.

One of the most recent innovations in the area of psychotherapy is the concept of family therapy.

In view of the role that alcohol can serve in the family, it becomes necessary to help families develop alternative living styles. Researchers offer the following suggestions:

1. In treating alcoholism, attention should be given to family interactional factors in addition to individual problems.

2. Consideration should be given to the adaptive or positive functions that drinking served, so that the family may integrate these functions into their sober life through some other means, instead of having to give them up along with alcohol.

3. Attention should be given to the family's extended social network. As a result of theoretical advances in family treatment, many alcoholism programs now routeinely see the relatives of alcoholic patients. In some instances therapeutic efforts may be concentrated on a significant relative rather than on the problem drinkers themselves.

The future of family therapy for the alcoholic family seems promising. Although an alcoholic may resist treatment, the family members may be eager to participate and to provide crucial support during particularly difficult periods. The process of making the family the patient allows the alcoholic to re-enter family life as an active and equal participant.

D. Behavioral Therapy

Behavioral psychologists believe drinking is a learned behavior pattern based on rewards and punishments. Treatment involves reversing the pattern so nondrinking brings rewards and avoids punishment. Techniques used in behavioral therapy for alcoholism include aversion therapies; assertiveness, coping and relaxation; biofeedback; blood alcohol discrimination training and controlled drinking.

E. A.A.

Alcoholics Anonymous is a group of alcoholics who have banded together to help themselves and others achieve sobriety. Anyone can join the group by attending a meeting. A.A. members admit that they are powerless over alcohol, place their faith in a power greater than themselves, and work on a "one day at a time" basis to maintain sobriety. In addition to the meetings, A.A. provides a helping network of members available by phone or in person to listen and offer support.

Al-Anon and Alateen are similar self-help groups, although separate organizations from A.A. Al-Anon seeks to help spouses and friends of problem drinkers while Alateen is directed at the children of alcoholics.

F. Facilities for Treating Alcoholism

A variety of resources for alcoholism treatment are now available. They include alcoholism information and referral centers, alcoholism treatment centers, general hospitals, mental hospitals, community mental health centers, detoxification centers; halfway and quarterway houses, vocational rehabilitation centers, alcoholism outpatient clinics, private physicians, Alcoholics Anonymous, human service agencies, police-court systems, skid row agencies and industrial rehabilitation programs. Consult your telephone directory for addresses and phone numbers.

WASHINGTON STATE LAWS

A great many laws and regulations have been written about alcohol in this state. More than 100 pages of these laws are contained in the Revised Code of Washington (RCW) and the Washington Administration Code (WAC). In addition to these laws, each city and county may have additional laws which apply locally, but which may not conflict with state statutes.

For the purposes of this supplement, discussion has been limited to those state laws which appear to have the greatest impact on the public at large and school-aged children. This chapter consists of synopses of various laws intended to provide a brief and uncomplicated look at an extensive and complicated issue. For the exact wording of any law, refer to the appropriate RCW or WAC as indicated by the number accompanying each annotation. Copies of the RCW or WAC may be found at local city hall offices, most attorneys' offices, county courthouse buildings, and college law schools, or can be ordered (for a small charge) from the Liquor Control Board.

For additional information, contact any of these offices:

- the city or county prosecutor
- local attorneys
- the public defender
- the state attorney general
- local alcoholism agencies
- college law schools
- legal aid
- the liquor control board

A. OVERVIEW

The "laws" of this state are generally of two types. First are those contained in the Revised Code of Washington (RCW). These statutes are laws passed by the state legislature. Second are those laws found in the Washington Administrative Code. These regulations are enacted by various state administrative agencies for the purpose of implementing the statutes (RCW) passed by the legislature. Court decisions may change or further define any of these laws. Such rulings are contained in the Washington State Supreme Court and Appellate Court reports. The RCW, WAC, and Court Updates comprise the extensive and at times confusing laws of our state.

For the purpose of this supplement, the Washington State laws pertaining to alcohol have been divided into three major categories: Alcoholic Beverage Control, Motor Vehicles, and Alcoholism Programs.

B. ALCOHOLIC BEVERAGE CONTROL LAWS

The administration of alcoholic beverage control laws is the responsibility of the Washington State Liquor Control Board (LCB). These laws pertain to the control of production, distribution and consumption of alcohol. They include rules on wholesaling, retailing, taxing, licensing, shipping, etc. Since they are numerous and varies, only the major laws relating to minors and the general public are listed here.

Violations of these laws may result in penalties ranging from a ten-dollar fine to imprisonment. Some violations are classified as misdemeanors or gross misdemeanors and carry appropriate penalties. (See "Penalities", pg.80 for further discussion.)

1. Minors

RCW 66.44.290 It is illegal for anyone under the age of 21 to buy or attempt to buy any alcoholic beverage.

RCW 66.44.291 Persons between the age of 18 and 21 who violate RCW 66.44.290 may be fined $25 to $100 or sentenced up to 30 days in jail or both. (Those under the age of 18 are turned over to juvenile authorities where appropriate penalties are determined. Penalties may be more or less severe than for those over 18 depending on the circumstances.)

RCW 66.44.300 It is a misdemeanor for anyone to invite a minor into a tavern or bar and purchase liquor for that minor or to accept liquor from that minor or to lie about that minor's age.

RCW 66.44.310 It is a misdemeanor:

a. to serve alcohol to anyone under 21 years of age in a tavern or to let them remain on the premises of the tavern.
b. for anyone under 21 to enter or remain in a tavern.
c. for anyone under 21 to lie about his/her age in order to enter or remain at a tavern.

RCW 66.44.315 Musicians between the ages of 18 to 21 may remain in any bar or tavern only during times when they are actually working as musicians at that bar or tavern. However, they cannot purchase or consume liquor.

RCW 66.44.320 It is a misdemeanor to sell liquor to anyone under the age of 21.

RCW 66.44.325 It is a misdemeanor for anyone to provide anyone under the age of 21 with false identification for the purpose of using that identification to purchase liquor.

RCW 66.44.270 It is a misdemeanor for any minor to possess or consume any liquor. It is illegal for any person to give liquor to a minor. It is illegal for any person to permit a minor to consume liquor on his or her premise or premises under his or her control, except:

a. parents or guardians may provide liquor to their children while under their supervision.
b. Minors may possess or consume liquor for religious purposes.

RCW 66.20.210 Any person attempting to enter a tavern or bar to purchase liquor whose age is in questions may be required to sign a card certifying his or her age. This signed card exempts the owner or employee of that establishment from prosecution for serving liquor to that person if he or she is not of legal age.

2. General Public

Some of the Alcoholic Beverage Control laws listed below may be invalidated by the Uniform Alcoholism and Intoxication Act (RCW 70.96A) enacted on January 1, 1974 in an effort to decriminalize

the "public drunk" and to afford him/her the opportunity for treatment. The laws in the following section marked by an (*) are those most likely to be affected by the Uniform Act. The full impact of the Uniform Act will not be known until controversies arising from individual cases have been settled by the courts.

*RCW 66.44.100 Any person who opens or consumes alcohol in a public place is guilty of a misdeameanor and shall be fined no more that $10.

*RCW 66.44.110 It is illegal to be drunk in any public place. Penalties for violation of this law are:

a. first offense - a fine of up to $10.
b. second offense - a fine of up to $25
c. third offense - imprisonment for up to thirty days.

RCW 66.44.240 I is a misdemeanor for anyone engaged in carrying passengers in a public conveyance to allow consumption of alcohol on that conveyance except in special areas set aside for that purpose.

*RCW 66.44.250 It is a misdemeanor for any person to consume alcohol while on a public conveyance except in areas set aside for that purpose.

RCW 66.44.150 It is a misdemeanor to purchase liquor from any person or store not authorized to sell it by the State Liquor Control Board.

RCW 66.44.160 It is illegal to possess or transport any alcoholic beverages obtained from any person or store not authorized by the State Liquor Control Board.

RCW 66.44.140 It is a gross misdemeanor to produce or sell any alcoholic beverage if one is not authorized to do so by the Liquor Control Board. However, one may produce wine or beer at home for the consumption at home, but not for sale, (RCW 66.12.010).

RCW 66.44.200 It is a misdemeanor to sell liquor to any person apparently under the influence of alcohol.

3. Miscellaneous Laws

The following is a list of some interesting and perhaps unusual laws related to alcohol. (Some of these laws, for various reasons, are no longer enforced. The (*) indicates those laws which may be invalidated by the Uniform Alcoholism and Intoxication Act.)

RCW 66.44.265 Political candidates may not purchase or give liquor to other persons in a place licensed for the sale of liquor by the drink on election day during the hours the polls are open.

RCW 7.48.240 All houses or places where drunkenness is carried on or permitted are nuisances and may be closed and the owners punished.

RCW 66.20.110 Dentists may administer alcohol to patients if an actual need exists.

RCW 66.20.120 A person in charge of hospitals, sanitoriums, or houses for the elderly may, if he or she holds a special permit, administer alcohol for external or medicinal purposes to patients of that institution if an actual need exists.

RCW 66.44.190 It is illegal to sell alcohol on the University of Washington grounds. (It may be consumed at banquets, if a permit is obtained.) Faculty areas are exempt.

RCW 19.60.063 It is a misdemeanor for a pawnbroker to receive property from a common drunkard, or while a person is in an intoxicated condition.

RCW 28A.05.010 The common schools (public schools) of Washington must teach students about the effects of consuming alcohol.

RCW 9.91.060 It is a gross misdemeanor for a person to leave a child unattended in a car while that person enters a bar or tavern.

RCW 9.91.020 It is a gross misdemeanor to be intoxicated while performing duties involving the running of a railroad, operating a vessel propelled by steam, or driving any animal or vehicle on public roads.

RCW 9.41.080 It is illegal for any person to sell or give a pistol to a habitual drunkard.

*RCW 77.16.070 It is illegal to hunt while intoxicated.

(In addition to these laws, the WAC contains numerous rules pertaining to the advertising of alcohol. For additional information on this topic, see WAC Chapters 314-52.)

4. Penalties

Violations of Alcoholic Beverage Control laws listed on the preceding pages (RCW numbers 66.44...), are subject to the following penalties, unless otherwise stated.

RCW 9.01.114 Being under the influence of alcohol is not a defense for any crime committed while under the influence of that drug.

RCW 66.44.010 Any person found in the act of violating any part of the laws contained in RCW 66.44 may be arrested without need of a warrant.

RCW 66.44.180 Unless otherwise stated, the penalties for violating any of the laws in RCW 66.44 are as follows:

a. first offense - imprisonment for up to two months or a fine of up to $300 or both.
b. second offense - the imprisonment may be increased up to six months.
c. third and subsequent offenses - the imprisonment may be increased up to one year.

RCW 9.92.020 Unless otherwise stated, violations categorized as gross misdemeanors will result in imprisonment for up to one year, or a fine of up to $1,000 or both.

RCW 9.92.030 Unless otherwise stated, violations categorized as misdemeanors will result in imprisonment for up to ninety days, or a fine of up to $250 or both.

C. MOTOR VEHICLE LAWS

The administration of the following laws related to alcohol and motor vehicles is the responsibility of the Department of Licensing.

RCW 46.61.502 Driving while under influence of intoxicating liquor or drug--What constitutes. A person is guilty of driving while under the influence of intoxicating liquor or any drug if he/she drives a vehicle within this state while:

1. She/he has 0.10 percent or more by weight of alcohol in his/her blood as shown by chemical analysis of his/her breath, blood, or other bodily substance made under RCW 46.61.506 as now or hereafter amended; or

2. She/he is under the combined influence of or affected by intoxicating liquor or any drug; or

3. She/he is under the combined influence of or affected by intoxicating liquor and any drug.

The fact that any person charged with a violation of this section is or has been entitled to use such drug under the laws of this state shall not constitute a defense against any charge of violating this section.

RCW 46.61.515 Any person convicted of driving while under the influence of intoxicating liquor or any drugs within this state shall be subject to the following penalties:

Section (a.) first offense - imprisonment for not less than one day, nor more than one year, and a fine not to exceed $500. That person's driving privilege will be suspended for not less than 30 days. The court may recommend that no suspension action be taken, as the director is the only person invested with the authority to suspend or revoke the driving privilege, not the court. The person shall also be required to complete an approved alcohol information school.

Section (b.) second or subsequent offense within five years - imprisonment for not less than seven days nor more than one year and a fine up to $1,000. That person's driving privilege shall be suspended for a minimum of 60 days.

Section (c.) third and subsequent offenses within five years - imprisonment and fines (same as (b.) above). That person's driving privilege shall be revoked for one year. In addition to these assessed penalties, the Department of Licensing shall impose habitual traffic offender sanctions revoking the driving privilege of the individual for five consecutive years.

If a person is without a valid driver's license because of a previous suspension, when arrested, the minimum mandatory sentence shall be 90 days and $200. Cannot be suspended or deferred.

The above penalties, except license suspension or revocation, may not be suspended or deferred unless risks to physical or mental well being are involved.

RCW 46.20.031 Section 4 The department shall not issue a driver's license to persons who habitually lack self control as to the use of alcoholic beverages, or use alcoholic beverages to the extent that their health is substantially impaired or endangered or their social or economic function is disrupted so as to constitute a danger to other persons or property: Provided, that a license may be issued if the department determines that such persons are participating in an alcohol recovery program acceptable to the department and have established control of their alcoholic condition.

RCW 46.20.311 & 46.29.250 Persons whose license are revoked or suspended due to driving while intoxicated or for refusing a breathalizer test, must file proof of insurance with the Department of Motor Vehicles. Such proof must be filed before the Department of Motor Vehicles will issue a license, and proof of insurance must continue to be filed for three years. Cancellation of insurance during this period will result in suspension of the license.

RCW 46.65.020 & 46.65.060 A person with three or more convictions for driving while intoxicated is classified as a "habitual offender" and his or her driver's license will be revoked for five years.

RCW 46.61.520 When any person dies as a result of injuries sustained in an accident caused by a driver who was under the influence of alcohol (or any drug), that driver shall be guilty of negligent homicide and sentenced to 10 years in the state penitentiary or one year in the county jail or a fine of up to $1,000 or both jail term and fine.

RCW 46.20.308 - Implied Consent Statute Any person who operates a motor vehicle upon any public highway shall be deemed to have given their consent to a chemical test to determine the level of alcohol present in that person's blood. This test shall be of the breath only, unless a person is rendered unconscious or is otherwise incapable of submitting to a breath test. If the arresting officer has established a reasonable likelihood that a person may die of the result of injuries in an accident, a breath or blood test may be administered without the consent of the individual arrested. This consent is deemed to be given when a person is arrested for any offense where, at the time of the arrest, the arresting officer has reasonable grounds to believe the person was actually driving or had been driving, a motor vehicle on a public roadway under the influence of alcohol.

Blood alcohol breath tests shall be administered under the direction of a law enforcement officer, who shall first inform the person of his or her rights to refuse such test and the consequences of that refusal.

If any person refuses to submit to a breath test, no test shall be given. However, after such refusal, the Department of Licensing shall revoke

that person's driving privilege for a minimum of six consecutive months, or, if the person has no license, deny the driving privilege for six consecutive months. The department must then notify that person of the action taken and his or her rights to a formal hearing on the matter. (If, as a result of that hearing the revocation is sustained, the person may appeal the revocation order to the Superior Court in the county of their current residence.) If it is finally determined that the license shall remain revoked, such revocation shall be for a period of six consecutive months. Under the provisions of this type of revocation there are no occupational licenses issued regardless of the personal hardship incurred by the individual.

Person's who are dead, unconscious or in any condition of being unable to refuse, are deemed not to have withdrawn their consent and may be tested for blood alcohol content by any qualified or licensed person authorized to withdraw and analyze blood samples.

D. ALCOHOLISM PROGRAMS

The administration of laws related to alcoholism programs is the responsibility of the Department of Social and Health Services (DSHS). The laws relating to alcoholism programs are primarily contained in RCW Chapters 70.96A, 71.12 and 48.21. Chapter 71.12 deals with private facilities for the treatment of various conditions, including alcoholism. Since much of what is contained in that chapter is either too technical for this section, or is contained in chapter 70.96A, it will not be discussed here. Chapter 48.21 deals with insurance and an important law from that chapter is:

> RCW 48.21.160 The legislature recognizes alcoholism as a disease and therefore orders all health insurance contracts issued after July, 1974 to include provisions providing benefits for the treatment of alcoholism.

Two important laws related to treatment are found in RCW 69.54:

> RCW 69.54.060 Any person fourteen years of age or older may give consent for himself to counseling care, treatment, or rehabilitation by an approved drug treatment center, or person licensed or certified by the state related to problems caused by drug or alcohol abuse. Parental consent is not required, except that such person shall not become a resident of such treatment center without parental permission.
>
> RCW 69.54.070 Any person being treated for alcoholism is guaranteed that all information regarding that treatment will be kept confidential, unless waived by the individual, provided that such care is received from a facility approved by the state under RCW 71.24.020 and 71.24.030 or from any person licensed or certified by the state to provide such care.

The remaining laws pertaining to alcoholism programs are found in chapter 70.96 and 70.96A. Chapter 70.96 establishes the framework for county alcoholism board, while chapter 70.96A, the Uniform Alcoholism and Intoxication Act, enacted on January 1, 1974, contains the majority of laws relating to alcoholism programs. Although the actual intent of this law can only be decided by the courts, those who work closest with the law feel it was enacted in an effort to decriminalize the "public drunk" and to afford him or her the opportunity for treatment rather than a jail term. Because of the complex nature of our legal system, it may be that the Uniform Act will have a greater impact than expected. If so, that impact will have to be decided by the courts.

Uniform Alcoholism Intoxication Act (RCW Chapter 70.96A)

RCW 70.96A.010 "It is the policy of the State of Washington that alcoholics and intoxicated persons may not be subjected to criminal prosecution solely because of their consumption of alcoholic beverages, but rather should be afforded a continuum of treatment in order that they might lead normal lives as productive members of society."

RCW 70.96A.080 The Washington State Department of Social and Health Services (DSHS) shall establish a comprehensive program for treatment of alcoholics and intoxicated persons. Every attempt should be made to make treatment services available at the community level. Treatment may not be provided in jails or in prisons, except for inmates.

RCW 70.96A.090 DSHS will establish standards for private and public treatment facilities. DSHS will also inspect all facilities to see that those standards are being met.

RCW 70.96A.100 Every effort should be made to have patients treated voluntarily rather than involuntarily and on an out-patient basis when appropriate. Treatment should be individualized to meet the needs of each person.

RCW 70.96A.120

1. A person who is found intoxicated in public and in need of help may be assisted to his or her home or to a treatment facility if he or she asks for help.
2. Except for persons who have violated laws not related to alcoholism or intoxication, anyone who violates laws pertaining to driving while intoxicated or refusing to submit to a breath test, and is incapacitated by alcohol in public and who has threatened, attempted, or inflicted physical harm to another person may be taken into protective custody by the police. If necessary, force may be used in this process. As soon as possible, and at most, within eight hours, that person must be taken to an approved alcoholism treatment facility or emergency medical facility. Being taken into protective custody under this law does not constitute an arrest, and no record shall be made to that effect.
3. Once an incapacitated person is no longer incapacitated, he or she may leave the treatment facility if desired (see RCW 70.96A.140).
4. Next-of-kin shall be notified, except for adults who request that no notification be made.
5. Treatment facilities shall assist persons without homes or funds to find shelter.

RCW 70.96A.140 Involuntary commitment to an alcoholism treatment program can only be done by a court order. Petition for commitment can be filed by the person in charge of the treatment facility or his/her designee. Before such an order can be issued, a formal hearing must be held to obtain all relevant information pertaining to the case. Persons committed in this manner shall undergo treatment for thirty days or less. Commitment may be extended, if necessary, by the same process as described above. In any event, commitment may not exceed 210 days.

RCW 70.96A.190 All laws (state, county, or city) which include drinking, being a common drunkard, or being found intoxicated as the primary element of the offense are no longer enforceable. Exceptions are made for laws dealing with drinking and driving, operation of various vehicles and machinery, coalitions involving minors, uses of alcohol at stated times by stated persons, and various other laws which do not hold drunkenness as the greatest element of the offense.

This section also states that being intoxicated is not a defense in itself and that persons arrested for crimes while intoxicated may still be prosecuted for those crimes, (e.g., someone arrested for assault while intoxicated can still be convicted of assault but not for being drunk.)

E. ALCOHOL INFORMATION SCHOOL

The administration of the laws related to alcohol information schools is the responsibility of the Department of Social and Health Services.

WAC 275-19-020 Alcohol information school provides the individual student with information regarding the use and abuse of alcohol and attempts to motivate the individual with a drinking problem to evaluate the problem and seek treatment.

WAC 275-19-800 Alcohol Information School--Purpose. The purpose of WAC 275-19-800 through 275-19-899 is to provide specific program standards and objectives for approval and accreditation of facilities providing alcohol information school services, as described in WAC 275-19-020. To be approved and accredited as an alcoholism treatment facility to provide alcohol information school services, the facility must comply with the requirements of WAC 275-19-010 through 275-19-199, the rules and regulations in this section, and chapter 70.96A RCW.

WAC 275-19-810 Alcohol Information School--Student Assessment. There shall be an assessment of each enrolled student's involvement with alcohol by a qualified alcoholism counselor, prior to the classroom instruction.

WAC 275-19-820 Alcohol Information School--Curriculum. 1) The alcohol information school shall provide a school curriculum which meets the guidelines published by the office on alcoholism.

2) The alcohol information school curriculum shall include the following:

   a. Adequate information regarding alcohol, alcohol abuse, and alcoholism.
   b. Information on the current laws addressing drinking alcoholic beverages and driving a motor vehicle.
   c. Information on the effect of the use of alcohol on driving ability.
   d. Information regarding the availability of alcoholism treatment resources.
   e. Information on the dangers of the use of alcohol in combination with other drugs.

3) The curriculum shall consist of not less than eight nor more than twelve hours of classroom instruction.

4) Not more than three hours of instruction shall be conducted in any one day.

5) A test or tests shall be administered to each enrolled student which will reveal the degree of subject retention and assist in evaluating the efficiency and effectiveness of the curriculum.

WAC 275-19-830 Alcohol Information School--fees. Student fees shall be limited to not more than two hundred fifty dollars for the classroom instruction and assessment. These fees shall be in accordance with guidelines established by the office on alcoholism.

SAFETY

Because alcohol affects the human body, especially the brain, it has the potential to affect the safety of the people who use it and those around them. For this reason, as well as others, the idea that, "I can drink as much as I want. I'm only hurting myself," requires some careful second thought. Consider the statement in light of the following information.

I. DRINKING AND DRIVING

A. Alcohol and Traffic Fatalities

It is nearly impossible to overstate the relationship between alcohol and traffic accidents. Many studies show that approximately one-half of all highway deaths are caused, at least in part, by alcohol. This is a daily average in the United States of 75 people. To put this in perspective, in the 11-year period, 1960-1971, 45,000 American soldiers were killed in combat in South Vietnam. During this same period, 545,000 American citizens were killed in traffic accidents. Of these fatalities, 274,000 were alcohol-related. Statistics on alcohol-related accidents in Washington State can be found on page

B. Blood-Alcohol Levels

Blood-alcohol level (BAL) refers to the ratio of alcohol to blood in the body: e.g., a blood alcohol level of .10 per cent means that there is one part alcohol for every thousand parts of blood. BAL is a measure used to classify a person's degree of intoxication.

The rate of absorption and volume of alcohol needed to produce intoxication vary from one person to another. The research that is available, however, demonstrates that a blood-alcohol level (BAL) as low as 0.02 per cent can adversely affect a person's behavior. At 0.05 per cent BAL, everyone is affected. The U. S. Department of Transportation believes that a BAL of 0.10 per cent should be considered prima facie evidence of driving while intoxicated; .10 per cent has also been adopted by the State of Washington as the BAL at which a driver is under the influence.

One of the major contributions to research on drinking drivers and accidents is the study conducted by the Department of Police Administration of Indiana University, which pointed out that when a driver's blood-alcohol concentration reached 0.15 per cent, the possibility of the driver causing a traffic accident is 25 times greater than if his body were essentially alcohol free. (See Figure 2.)

Blood-alcohol concentrations over 0.04 per cent are definitely associated with increased accident involvement, according to the study. When the alcohol concentration reaches 0.06 per cent, the probability of causing an accident is twice that of the alcohol-free driver and at 0.10 the probability is six times greater.

BLOOD ALCOHOL CONTENT

To find your BAC:

First Find your weight in the left hand column. (For weights not shown, use the closest figures and then average.)

Second Select the column showing how many drinks you have had.

Note: One drink equals 12 ounces of beer, one shot of hard liquor (80 proof), or five ounces of wine.

Third Using the number of hours in which you consumed those drinks, find your BAC.

Figure 1

BAC CHART

After Hours	1 Drink				2 Drinks				3 Drinks				4 Drinks			
	4	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1
Weight (lbs.) 80	–	–	–	.02	–	–	.05	.08	.07	.10	.10	.10	.12	.12	.15	.15
100	–	–	–	.02	–	–	.04	.06	.05	.07	.08	.09	.09	.10	.12	.13
120	–	–	–	.02	–	–	.03	.04	.03	.04	.06	.08	.06	.08	.09	.11
140	–	–	–	.01	–	–	.02	.04	.02	.03	.05	.06	.04	.06	.08	.09
160	–	–	–	.01	–	–	.02	.03	.01	.02	.04	.05	.03	.04	.06	.08
180	–	–	–	.01	–	–	.01	.03	–	.02	.03	.04	.02	.04	.05	.07
200	–	–	–	–	–	–	.01	.02	–	.01	.03	.04	.01	.03	.04	.06

After Hours	5 Drinks				6 Drinks				7 Drinks				8 Drinks			
	4	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1
Weight (lbs.) 80	.17	.17	.19	.20	.19	.22	.22	.25	.25	.27	.27	.30	.29	.30	.32	.33
100	.13	.14	.16	.17	.16	.18	.19	.21	.20	.22	.23	.25	.24	.25	.27	.28
120	.09	.11	.13	.14	.13	.14	.16	.17	.15	.17	.19	.20	.19	.20	.22	.23
140	.07	.09	.10	.12	.10	.12	.13	.15	.13	.14	.16	.17	.15	.17	.18	.20
160	.06	.07	.09	.10	.08	.09	.11	.13	.10	.12	.13	.15	.13	.14	.16	.17
180	.04	.06	.07	.09	.06	.08	.09	.11	.09	.10	.12	.13	.11	.12	.14	.15
200	.03	.04	.06	.08	.05	.07	.08	.09	.07	.09	.10	.12	.09	.10	.12	.13

Numbers equal the percentage of alcohol in the blood. Dash (–) = a trace of alcohol.

Examples: A) A 180 pound person who drank five drinks in three hours would have a BAC of .06.

B) A 95 pound person who drank 3 drinks in two hours would have a BAC of .08 - .10.

REMEMBER: Your reaction to alcohol is affected by factors, such as:

1) What you've eaten
2) Your mood
3) The setting
4) Your drinking experience
5) Your personal chemistry
6) Other drugs you've taken

C. Effects of Alcohol on Human Functioning

The ability to perform driving maneuvers depends on the driver's mental, emotional, and physical state.

Anything that weakens or damages the ability to perform well or to make sound decisions is called an impairment. Some impairments are physical: they affect the ability to see, hear, or control muscular movement. Other impairments affect decision-making abilities. The use of alcohol impairs both physical and mental functioning. It affects three areas of the body which are essential for the responsible handling of an automobile: judgment, reflexes and vision. Each of these will be discussed separately.

1. Absorption of Alcohol into the Body. Alcohol does not have to be digested. It enters the bloodstream directly through the lining of the stomach and affects the body very soon after drinking. The rate of absorption of alcohol into the bloodstream, however, does vary. For example, if the stomach is full of solid food, it will dilute the alcohol and slow the rate of absorption. In general, however, the absorption process is completed within 20 to 40 minutes from the time that a drink is consumed.

   As the bloodstream carries the alcohol to the brain, it affects the cerebrum, the portion of the brain where judgments and decisions are made. As the concentration of alcohol increases, it affects the cerebellum, the area which controls muscular movement and maintains body equilibrium.

2. Alcohol and Vision. Alcohol has long been thought to seriously impair all functions of vision at a relatively low blood-alcohol level. This does not appear to be true. However, coordination of eye movements and the ability to divide attention between different tasks appear to be affected at low-level concentrations of alcohol. In effect, persons who have consumed alcohol tend to fix their vision on one object, rather than moving from one object to another to gather information. Since driving an automobile is an activity in which one must continually identify and react to many changing stimuli, impairment of the ability to divide attention among many cues can be critical.

3. Alcohol and Reflexes. We frequently picture a "drunk" as a person who is stumbling and having difficulty standing. Inexperienced drinkers may behave like this after consuming very little alcohol. Among experienced drinkers, however, such behavior may not appear until the individual has consumed large quantities of alcohol.

   Alcohol may affect muscular control. For example, a person's steadiness may be lost. When drivers with high blood-alcohol levels are tested under actual driving conditions, impairment often becomes evident in steering, braking, and speed control. Steering-wheel movements tend to increase and steering responses are slowed. Drivers with high blood-alcohol levels have difficulty steering through turns. They are not able to make the steering corrections necessary.

Brake reaction time under such conditions also tends to increase, as does the ability to apply the brakes smoothly or to come to a stop at a specific point. Drivers who have been drinking also have difficulty in maintaining a constant speed. They seem to speed up and slow down unnecessarily. They also make speed adjustments--either braking or accelerating--that are exaggerated.

When alcohol is in the brain, a longer time span passes before the voluntary muscles can obey the messages sent by the brain. A blood alcohol concentration of from .10 to .20 per cent slows the time it takes one to react by 10 to 30 per cent; in an emergency, even a fraction of a second can make a difference.

4. Alcohol, Judgment, and Behavior. When inhibitions are reduced people tend to display greater anger, sadness, silliness, rudeness, or suspicion, depending on their personality and the mood they were in when they started to drink. Some people even fall asleep after a few drinks.

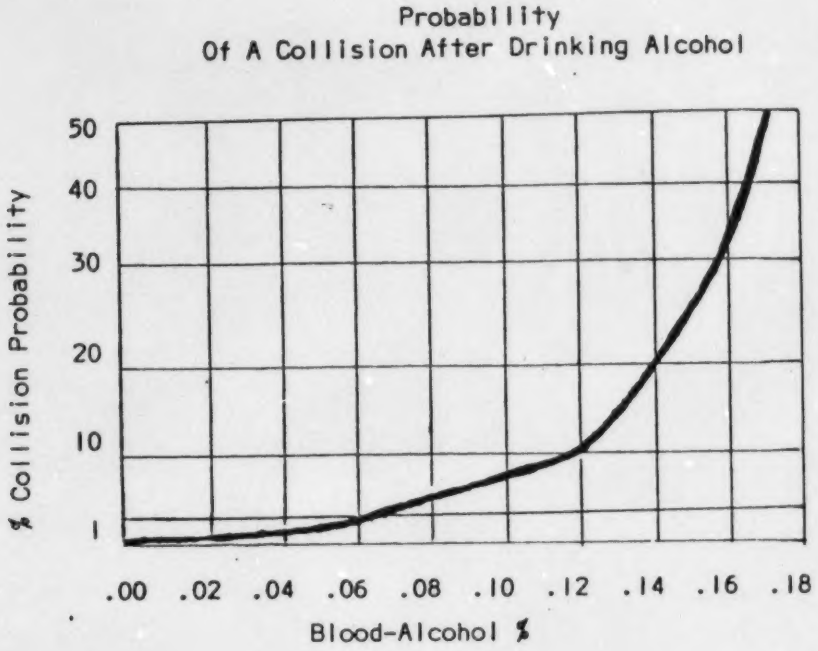
Because of emotional and physical differences, such as size or fatigue, the effects of alcohol differ from one person to another. Furthermore, alcohol will not affect people the same way every time they drink. A change in the contents of the stomach, one's emotional state, or the type of drink can cause reactions to vary.

Some people drink simply for the experience of feeling "high." They want to experience the special feeling that alcohol creates. Therefore, they may feel high after consuming a relatively small amount of alcohol. Their mental processes, however, may be impaired just as though they were truly intoxicated.

It is impossible to predict accurately the behavioral changes that will take place in individuals who drink. The only sure prediction is that the use of alcohol will not improve driving performance and in any quantity will impair judgment. As judgment deteriorates, the people feel that they are actually more skilled than while sober. They are therefore likely to take more chances in passing, speeding, and negotiating curves than usual.

To illustrate this point, Figure 2 below shows the increased probability of a collision with increased blood-alcohol levels.

Figure 2



D. Alcohol and the Young Driver

Drinking and driving appears to be a special problem among young drivers. This problem is illustrated by the fact that at least six out of every ten highway deaths of drivers between 16 and 24 involve drinking and driving. There are several possible explanations for this. One is that young drivers are generally learning to drink at a time when they are still developing the judgments and skills necessary for safe driving. Their driving skills may be less automatic. In other words, because they are less experienced, they have to think more about how they drive, and alcohol affects their ability to think clearly, logically, and quickly. In addition, teenagers are often affected more quickly and severely than adults by alcohol because they usually weigh less than adults.

Statistics on fatalities involving Washington state drivers under 21 years of age can be found on pages 95-96.

E. The Drinking-Driving Decision

Many drivers are aware of the effects that alcoholic beverages have on their driving performance, and they avoid driving after they drink. Others attempt to modify the effects of alcohol by eating before they drink or by drinking only at meals. Still others limit the number of drinks they have, or they space their drinks so that their blood-alcohol level does not get too high.

The decisions one makes about drinking are personal decisions. No one can force another to drink or not drink, nor to ride with someone who has been drinking. However, decisions must be made before one begins drinking, because once started, alcohol interferes with making sound decisions.

Human beings make mistakes, even when they are performing at top level. Remember that consumption of alcohol simply increases the chances of such mistakes. The more a person drinks, the greater the risk he/she takes.

F. Drinking and Driving Statistics in Washington State

The following statistics are from the Washington State Patrol 1978 summary of accidents involving the drinking driver:

> There were 91,342 investigated motor vehicle traffic accidents in the State of Washington during the year. Of these, 20,028 or 21.9 per cent, involved a drinking driver. This compares to 20,394 for 1977--a decrease of 1.8 per cent.
>
> The total number of drivers involved in 20,028 accidents was 28,937. The number of drivers who had been drinking was 20,959.

Table 1

Degree of Drinking*	Drivers In: All Accidents 1977	Drivers In: All Accidents 1978	Drivers In: Fatal Accidents 1977	Drivers In: Fatal Accidents 1978
Had Been Drinking, Ability Impaired	9,874	9,594	379	387
Had Been Drinking, Ability Not Impaired	4,960	4,990	61	68
Had Been Drinking, Sobriety Unknown	6,403	6,375	46	45
Sub-Total, "Had Been Drinking"	21,237	20,959	486	500
Total Drivers, Excluding "Not Stated"	131,685	136,182	1,092	1,222
Number of Drivers Drinking Per Every 100 Involved	16.0	15.0	44.5	40.9
Number of D.W.I. Per Every 100 Involved	7.5	7.0	34.7	31.7

*Refers to all drivers in all investigated accidents.

Table 2

Types of Drinking Driver Accidents (1978)

	Urban Areas		Rural Areas	
	All Accidents	Fatal Only	All Accidents	Fatal Only
Single Vehicle Collision	3,055	57	6,664	229
Fixed Object	2,627	35	5,083	157
Other Object	8	0	18	2
Overturned	277	9	1,427	54
Vehicle-Pedestrian	84	8	45	11
Vehicle-Railway Train	17	2	9	2
Vehicle-Pedalcyclist	23	2	10	0
Vehicle-Animal	0	0	43	1
Noncollision	19	1	29	2
Multiple-Vehicle Collision	6,251	52	4,058	120
Head-On	169	9	247	32
Rear-End	1,409	10	1,019	6
Sideswipe	447	3	496	3
Angular Direction	1,257	13	684	13
Enter/Leave Parked Pos.	67	0	25	0
Enter/Leave Driveway	430	0	533	6
Struck Parked Vehicle	1,883	6	486	6
Skidding-Broadside	201	8	326	49
1 Left/1 Straight	388	3	242	5
Total Accidents	9,306	109	10,722	349

Accidents for Drivers Under 20 Years of Age -- 1978

1. Under 20 year old drivers made up 8.2 per cent of total licensed drivers.

2. Under 20 year old drivers were involved in 25.5% of ALL fatal collisions.

3. 45.8% of ALL fatal collisions were one-car collisions.

4. Under 20 year old drivers were involved in 20.2% of all one-car fatal collisions.

5. Causes of all fatal crashes involving drivers under 20 years:

A.	DWI	30.8%
B.	Speed over Legal	19.2%
C.	Safe Speed	9.8%
D.	Inattention	3.3%
E.	Improper Lane Travel	0
F.	Failure to Yield Right of Way	10.3%
G.	Improper Passing	3.3%
H.	Over Center Line	7.0%
I.	Disregard Signal	5.1%
J.	Fall Asleep	3.3%
K.	Defective Equipment	4.2%
L.	Other	3.7%
	Total	100.0%

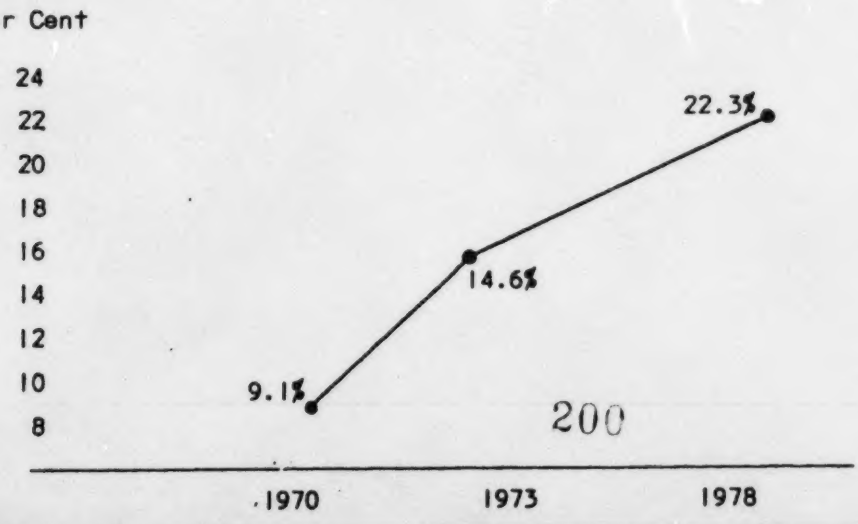
6. Under 20 year old drivers that were DWI at the time of collision:

All Fatal Collisions

Age	Number of Drivers	
16 and under	8	12.1%
17	18	27.3%
18	16	24.2%
19	24	36.4%
Total	66	100.0%

Figure 3

Percentage of Total Traffic Accidents Caused by Teenage Drivers, 1970-78, State of Washington:



II. DRINKING AND OTHER SAFETY PROBLEMS

A statistical bulletin of the Metropolitan Life Insurance Company reports that "A study of fatal home accidents among policy holders indicates that alcohol plays an important role in (household) . . . accidents among young adults and middle aged." Another study of nonfatal home accident victims in Massachusetts reported that 21 per cent of the males had been drinking and almost 9 per cent of the females were similarly affected. In both of the above studies falling asleep with a lighted cigarette, poisoning and drownings all had drinking associated with them.

In a similar report, the Federal Aviation Agency reported that 35.4 per cent of the pilots of private planes that were killed had measurable blood alcohol concentrations. Another study showed that 39 per cent of the general aviation (noncommercial) pilots killed had alcohol in their bodies.

A study of pedestrian fatalities showed that 40 per cent of those killed had blood alcohol concentrations of 0.10 per cent in comparison with 8 per cent of those not hit who were on the streets at the same times and locations.

A. Economic Cost of Alcohol-Related Problems

Alcohol abuse and alcoholism cost the United States nearly $43 billion in 1975. The estimate was derived from an analysis of six aspects of social behavior in which alcohol had significant economic impact. The six aspects are listed in the following table, with estimates of cost for each.

Table 3

Economic Costs of Alcohol Misuse and Alcoholism in the United States, 1975

Item	Cost (billion $)
Lost production	19.64
Health and medical	12.74
Motor vehicle accidents	5.14
Violent crime	2.86
Social responses	1.94
Fire losses	0.43
Total	$42.75

B. Lost Production

In general, lost production is considered in terms of the goods and services that usually flow through the traditional market system. When alcohol abuse lowers a worker's productivity, the goods and services not produced as a consequence do not appear in the marketplace. Several studies indicate that firms with alcohol-troubled employees suffer economic losses in the form of tardiness, absenteeism, worker friction, and lowered productivity because of those personnel.

C. Health Care

In 1975, approximately $12.74 billion, or 12.1 percent of the total adult population's health expenditures, was spent for alcohol-related health and medical services, making health care the second largest economic cost of alcohol misuse, problem drinking, and alcoholism. The available mortality data suggest that alcohol abuse increases health care costs across a broad spectrum of diseases, including heart disease, certain cancers, pneumonia, and stomach and duodenal ulcers.

Of the $12.74 billion expended for alcohol-related health services, the largest share went for hospital care. The total population over 16 years of age, estimated in 1975 at 155 million people, used $42.3 billion worth of hospital care. The estimated 10 million problem drinkers accounted for $8.4 billion or almost 20 percent of all hospital care expenses.

TEENAGE DRINKING

I. TEENAGE DRINKING PATTERNS

There are many adults today who have breathed a sigh of relief because, apparently, the "drug" problem has subsided. However, there is growing concern among other adults about the increased use of alcohol by teenagers. Every indication suggests that young people have merely shifted their drug use to involve to a greater extent the more socially-acceptable drug, alcohol.

Recent research on adolescent drinking reveals some general trends in their drinking behavior:

1. The personal use of alcohol is not solely an adult experience in this society. The first personal use of alcohol is typically reported to be in the home, with parents or other relatives present. Independent drinking, away from home, usually occurs at about age 10-13 or the beginning of junior high school.

2. The probability is quite high that almost every adolescent in our society will have used an alcoholic beverage at least once before being graduated from high school.

3. Adolescents who drink typically report that at least one parent is a user. Abstinent adolescents usually report that their parents are also abstinent.

4. The proportion of drinking adolescents who claim parental approval is greatest among those who confine their drinking to the home.

5. Among adolescents, as among adults, the probability that an individual will be a user varies with such social factors as sex, age, socio-economic position, ethnic and religious background, and rural or urban residence.

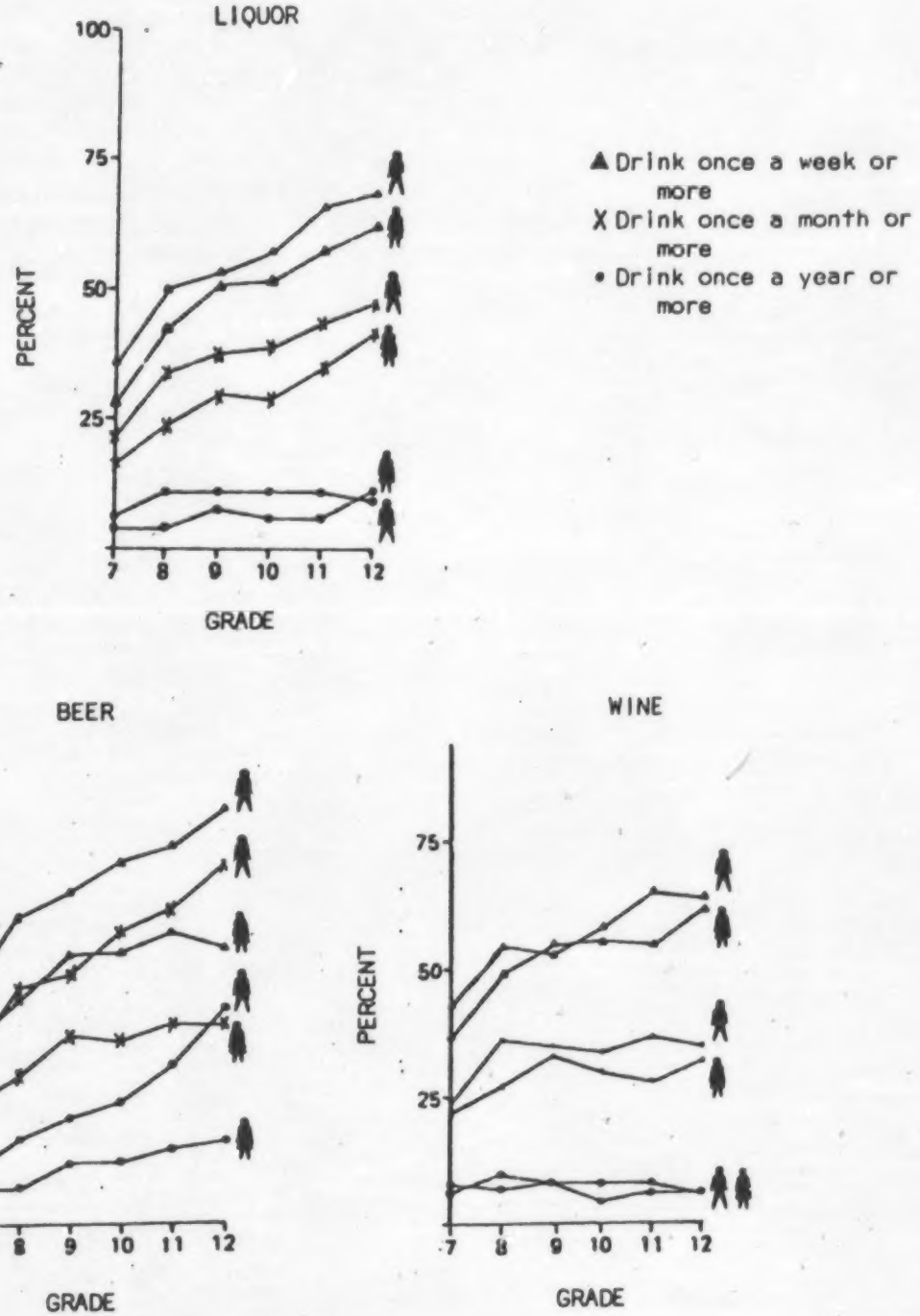
6. The number of regular drinkers, the quantity of alcohol consumed and the frequency of use in this population increase proportionately with age. (See figure 1).

A study completed in 1974 by the Addiction Research Foundation of Toronto, indicates that dangerous, illicit drug use has declined since 1970, but the use of alcohol and marijuana has increased consistently and significantly over the past six years. It was noted in the study that the percentage of students reporting the use of alcohol at least once in the past six months has jumped to 72.9 per cent in 1974 from 46.3 per cent in 1968. The study was conducted in metropolitan Toronto, but the results were very much the same as those found in studies conducted in California over the same time span.

Changes in where teenage drinking takes place with advancing age was noted in a recent study: from 60 per cent of seventh graders who only drank at home on special family occasions to 75 per cent of

FIGURE I PERCENT OF DRINKERS AMONG TEENAGERS BY SEX, GRADE, FREQUENCY OF DRINKING AND TYPE OF BEVERAGE

1974



Source: Alcohol and Health, 1974

twelfth grade teenagers who said they drank at unsupervised parties. (See figure 2).

In a separate study, NIAAA gathered information about drinking patterns of older adolescents attending colleges and universities. The trend toward almost universal use of alcohol was also evident in this age group. In reviewing surveys of alcohol use on college and university campuses, it was found that the percentage of college students that drink ranges from 71 per cent to 96 per cent. At most schools it ranged from 87 per cent to 93 per cent.

These figures are probably an underestimation because there is little hard data available about drinking patterns among young people who are not in school. Some studies of out-of-school youth indicate that this population has a higher proportion of drinkers than the school population.

II. PROBLEM DRINKING AMONG TEENAGERS

A. National Data

As alcohol consumption among young people rises, so do problems related to the use of alcohol. A study on alcohol use and driving sponsored by the National Highway Traffic Safety Administration in 1974 surveyed high school students, from freshman through senior years. These students were from 25 geographical areas selected to represent the national picture. It was concluded from this study that there is an alarming amount of drinking and driving taking place among a large, mainstream group of U.S. youth. In fact, high school students are in contact with alcohol-related situations almost as often as adults are today.

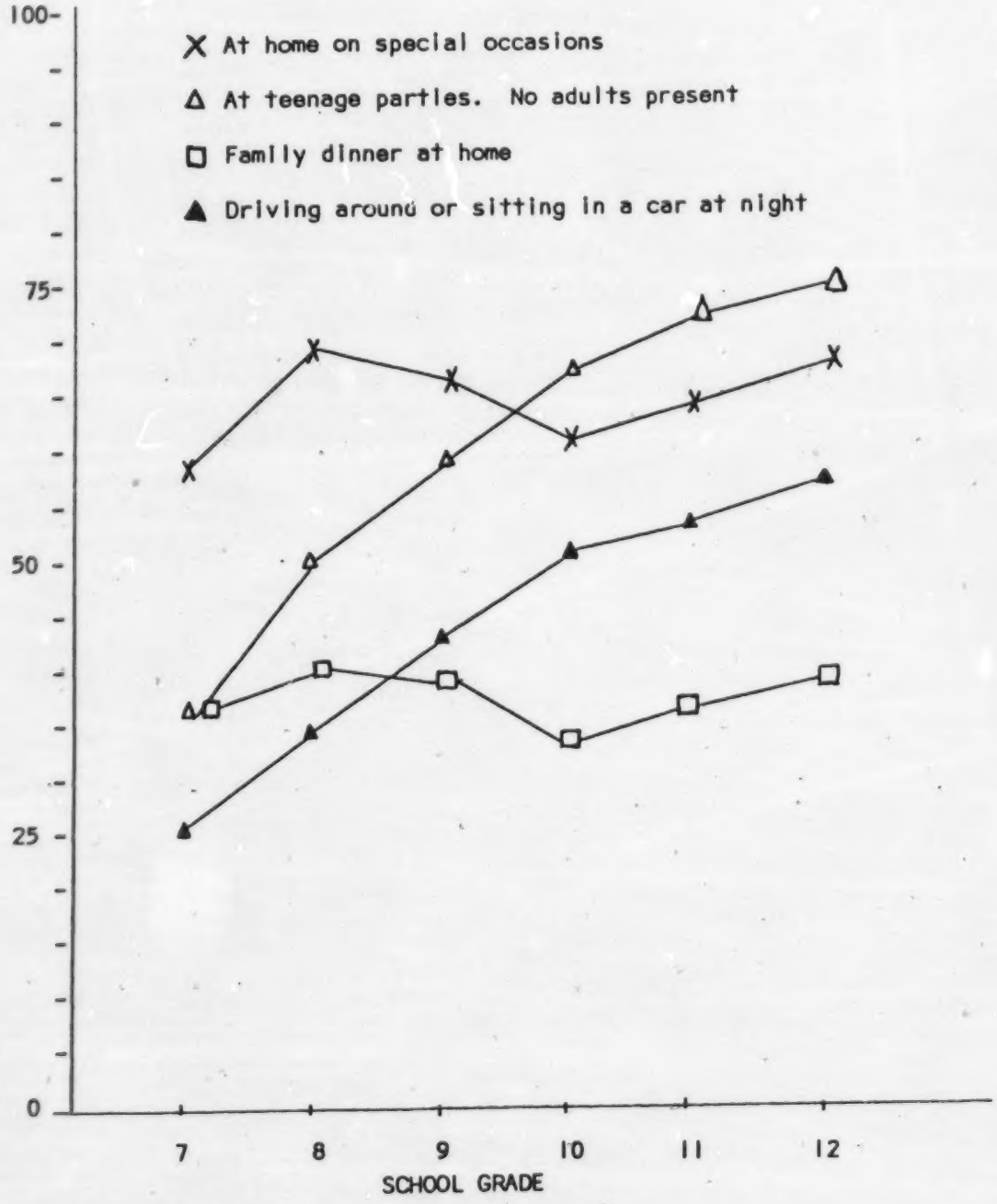
Arrests of persons under 18 for alcohol-related offenses (driving while intoxicated, liquor law violations, and drunkenness) increased nationally by 135 per cent between 1960 and 1973. Among these, arrests for driving while intoxicated increased by more than 400 per cent. These figures were obtained from the Uniform Crime Reports, 1974.

B. Washington State Data

Although hard data on how many teenagers drink how much alcohol, how often is sparse, some idea can be inferred from the number of people who come in contact with community alcohol centers. During 1979, approximately 17,000 people were served by community alcohol centers. Of this number, about 1,000 (six percent) are between the ages of fourteen to nineteen. Of those who attended alcohol information school, nineteen percent were teenagers.

FIGURE 2 PERCENT OF TEENAGE DRINKERS BY SCHOOL GRADE AND SETTING

1974



Source: Alcohol and Health, 1974

It has been said that, ". . .sooner or later, all young people in our society are faced with the inevitable decision to drink or not to drink. Three-fourths of them will make this decision and use alcohol before they are legally entitled - one-third on a regular basis, while five to ten percent will experience serious complications as a result of drinking and one in 12 will go on to become an adult problem drinker or an alcoholic.

III. REASONS FOR DRINKING

One of the things that concerns people most about teen-age drinking is the question of why it happens. Most of the decisions parents make about what, if any, rules to set, what difficulties to try to counteract, even how to talk about drinking to a son or daughter, hinge in many ways on what they believe to be the basis for teen-age drinking.

Why is always a complicated question to answer. Studies of teen-age drinking do not 'prove' that teen-agers drink for any one reason, but suggest there may be a variety of factors involved. Some of these are outlined in the following sections:

A. The First Drink

Often young people have been asked why they drank for the first time. Reasons for starting to drink center mainly around celebrating a holiday or special occasion, curiosity about drinking, or because their families served them drinks. Taken together, these three reasons account for well over half the adolescents' answers for beginning to drink. Reasons for continuing to drink include: boredom, to get high, to lower their inhibitions so they can have more fun.

B. Peer Pressure

Another explanation of adolescent drinking is that it is the result of social pressure from other adolescents. The desire to be one of the crowd is a popular explanation for many things that people do. Almost every parent is used to hearing explanations about what "everbody else" does, and is familiar with the argument beginning, "All the other kids are . . ." Ideas about drinking are spread in the same way as styles of hair cuts, clothes, etc.

The adolescent years are a time when young people are moving toward self-reliance. If it begins to seem too "childish" to a young person to look for moral support from adults on various issues, other young people can partially fill in the gap. So adolescents are often quite vulnerable to the opinions, the approval and criticism of their friends. The need to belong is felt by everyone, but for teenagers this need is intensified, and to be 'out of it' can be especially hard to take.

C. Symbol of Adulthood

Another theory about adolescent drinking is that young people drink mainly in order to seem grown up. Drinking becomes a badge of

adulthood and sophistication, and is a way of proving oneself. Studies indicate that young people are more likely to drink as they come closer to adulthood--up to about the age of seventeen when the percentage of youths who drink approximates the rate among adults. Older youths are more likely to drink more often, too, and to drink more, which is what one would expect if drinking is a way of asserting adulthood.

D. Rebellion

The rebellion theory holds that drinking is a kind of rebellion against the adult world, and young people who drink do so to protest against adult authority.

This theory does explain some adolescent drinking. There are some groups in which this is true, and it is likely that every young person has thoughts about rule-breaking on occasion. But as a general explanation of all adolescent drinking, this view is contradicted by other evidence.

E. Imitation

Many people would say that the best explanation for adolescent drinking is quite simple: They drink because their parents do.

Adolescents do not invent the idea of drinking, they learn it. The acceptability and desirability of drinking are continually suggested by the elaborate integration of the use of alcohol into American culture and through adult social behavior.

It is not surprising that young people use alcohol, since two out of three American adults choose to drink.

What youth see today is a mixed model of adult use and misuse of alcohol and they sense the ambivalent attitudes of their elders toward alcoholic beverages. The drinking behavior of parents is more closely related to what their children do about drinking than is any other factor.

DRINKING PATTERNS

I. INTRODUCTION

Some people drink and some don't! A very simple statement! However, the reasons for abstaining or drinking are as varied as the people themselves. Because of this wide variation it would be impossible to list all of those reasons. It is important to realize that many people do or do not drink for similar kinds of reasons, including:

A. Reasons for Drinking

- To heighten their pleasure when they're having a good time.
- Because they like the taste.
- Continuing a habit acquired in youth.
- Because their parents drank.
- Because they like the way alcohol makes them feel.
- Out of curiosity.
- As a means of celebrating a special occasion.
- To relieve worries and anxieties or tensions and fatigue.
- Because of social pressures.
- Because it is a family tradition to drink alcoholic beverages, usually wine or beer, with meals.
- To feel closer to other people, share their happiness.

B. Reasons for Not Drinking

- Because of personal convictions against drinking.
- Because the religion which they practice prohibits its use.
- Do not like the taste of it.
- Because they are athletes and its use is against regulations.
- It's too expensive.
- Because of ill health or because of an allergy to alcohol.
- Because they choose not to consume anything that will impair mental and physical processes.

It has been suggested by some that there are basically five "rational" reasons for drinking alcoholic beverages. These reasons are:

1. To quench a thirst;
2. To savor the taste;
3. To relax;
4. To enhance socialization;
5. To serve a medicinal function.

It should be noted that each of the suggested "rational" uses of alcoholic beverages has limits, beyond which continued use becomes "irrational" and inappropriate. For example:

1. People who state that they only drink to "quench a thirst" while at the same time consume a six-pack of beer on a hot afternoon after mowing the lawn, have passed the "rational" limits. Would such people drink 72 ounces of water to "quench a thirst"?

2. Individuals who say they only drink because they like the taste of alcoholic beverages, and then admit to consuming twenty beers or six to eight mixed drinks. The "rational" limits of drinking for taste have been passed because, physiologically, the depressant effect of alcohol has deadened the taste buds to the point that they can no longer actually taste the beverage.

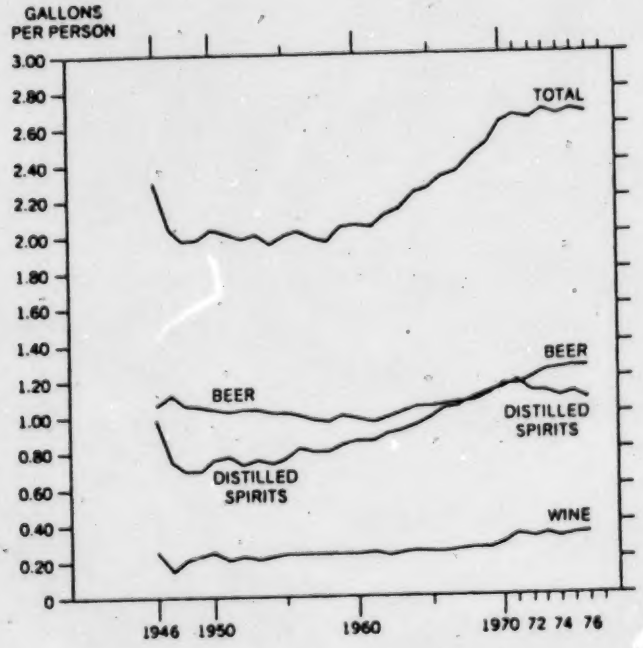
3. Drinking for relaxation also has its limits. The individual who is arrested for Driving While Intoxicated and "scores" a .36 blood/alcohol content on a Breathalyzer test has passed the "rational" limits for the use of alcohol as a relaxant.

4. The individual drinking to enhance a social situation may also drink beyond the "rational" limits. Few persons would disagree with the conclusion that the thoroughly intoxicated individual is more anti-social than social.

5. Finally, the medicinal uses of alcohol are extremely limited and excessive use for this purpose quickly gets beyond "rational" limits. Alcohol is a depressant drug, but there are many other such drugs which are more effective and safer for use as a medicine.

C. Patterns

Regardless of the reasons, the fact is, people do drink.



Drinking patterns are primarily a matter of statistics, and it seems that statistical surveys about alcohol consumptions are "cheaper by the dozen."

Sometimes it seems like people can reach any conclusion they want depending on how the figures are juggled. This paragraph is intended to serve as a word of caution before attempting to read the following tables excerpted from the American Drinking Practices study by Don Cahalan and Alcohol and Health, New Knowledge by the National Institute on Alcohol Abuse and Alcoholism. Keep in mind that these are only 2 studies and they may very well disagree with some other studies done by other people at other times. However they are recognized by a number of professionals in the field as the best statistical studies of American drinking practices available. When professionals were asked about the current relevance of the Cahalan study, done in 1964-65, the unanimous response was "the total consumption may have increased, but the overall patterns have remained the same."

II. SOCIOCULTURAL CORRELATES OF DRINKING

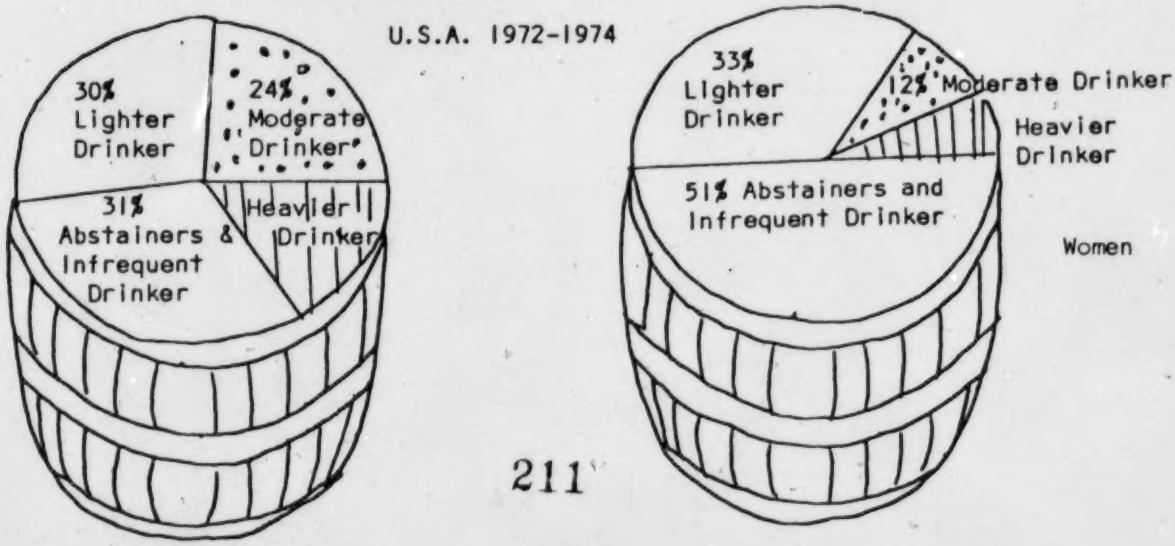
Sociocultural factors previously found to be associated with whether and how much a person drinks continue to be strongly correlated with consumption patterns. Among such factors are sex, age, ethnic background, religious affiliation, education, socioeconomic status. occupation, and area of residence and degree of urbanization.

A. Sex

The proportion of adult women who drink has been increasing steadily since World War II, and the results of recent surveys indicate that this trend is continuing. About 47 per cent of adult women now drink once a month or more. However, men are nearly twice as likely to be moderate drinkers and three times as likely to be heavy drinkers in comparison with women. In the study most men up to 65 years reported drinking at least once a month. The highest proportion of heavier drinkers occurred among men aged 18 to 20 and 35 to 39. Women aged 21 to 29 had the highest proportion of heavier drinkers.

FIGURE I PERCENT OF DRINKERS AND TYPES OF DRINKERS BY SEX

U.S.A. 1972-1974



B. Age

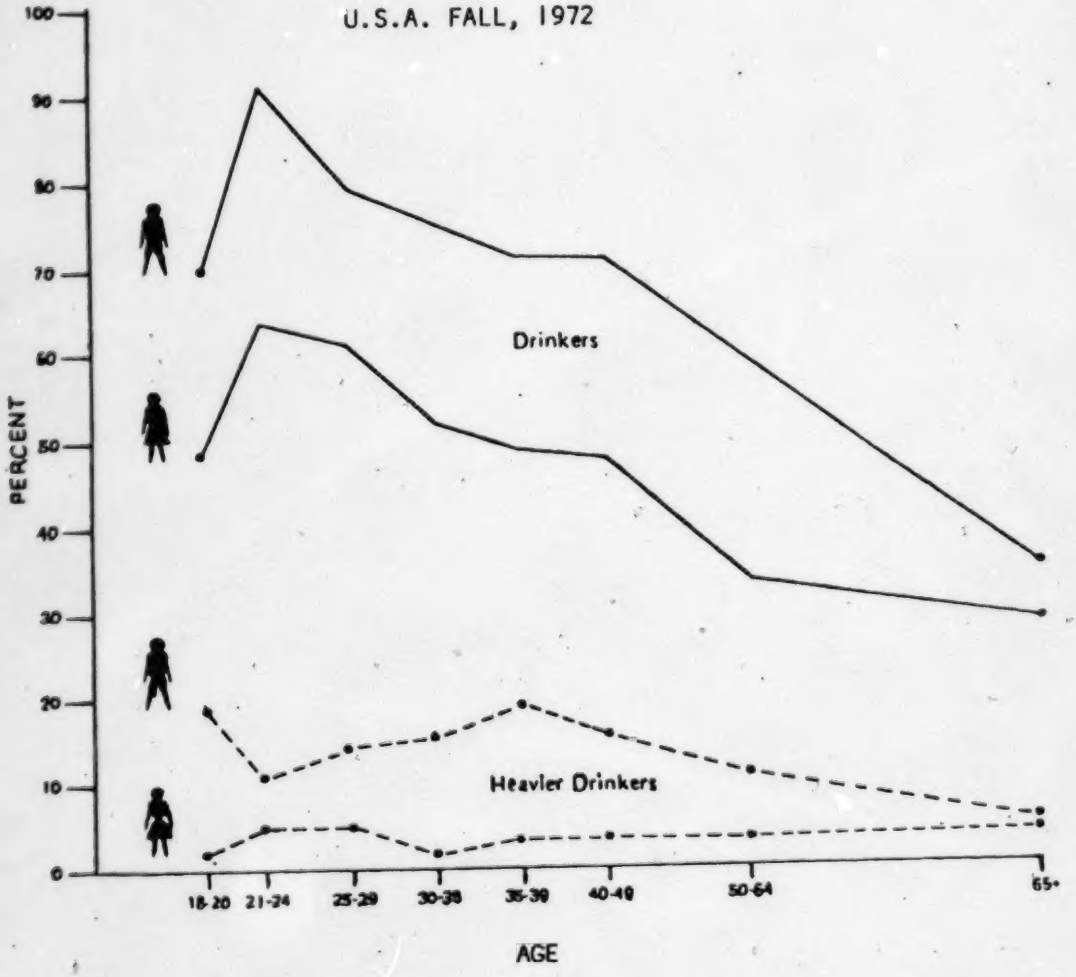
A larger proportion of drinkers is consistently found in the younger age groups (21 to 24 years) and a larger proportion of abstainers is found among older persons. Despite the increase in young adults between ages 21 and 24 who drink once a month or more, heavier drinking among men is higher in the 18- to 20-year group than in the 21- to 24-year group.

Similar proportions of young adult drinkers and nondrinkers were reported in two recent nationwide surveys. A 1970 survey of young men 1 year after high-school graduation revealed that 67 per cent drank once a month or more. The survey results also showed an increase in the frequency of regular drinking (once a week or more) from 33 per cent during high-school years to 44 per cent the following year. It is interesting that the amount of regular drinking was higher among high-school students who joined the military (55 per cent) than among those who entered civilian jobs (48 per cent) or college (38 per cent). The military sample not only started out with higher use rates than most other groups but also showed the highest rate of conversion from abstinence to use.

A 1971 Gallup survey of a national sample of full-time college students revealed that 60 per cent had drunk beer during the 30 days before the interview; 52 per cent had drunk wine and 49 per cent spirits. Consumption frequency had increased between ages 18 and 24 and was higher among men than women.

The overrepresentation of young adults in the drinking population was further corroborated by a survey of 2,938 Irish- and Italian-Americans. The use of large quantities of all beverages in both these populations declines consistently with age. The 18- to 20-year olds reported the highest levels of frequent consumption of five or six drinks at an occasion.

FIGURE 3 PERCENT OF DRINKERS AND HEAVY DRINKERS AMONG ADULTS BY, SEX AND AGE, U.S.A. FALL, 1972



C. Racial and Ethnic Background

The rates of alcohol use and alcoholism tend to vary among various ethnic and racial groups.

Alcoholism and problem-drinking rates tend to be low among groups whose drinking habits are well integrated with the rest of their culture.

It has been reported that Irish-Americans have more problem drinking than other Americans of the same social class, that little of their drinking is associated with important rituals, and that intoxication is often deliberately sought. Italian-Americans, on the other hand, have strong sanctions against drunkenness, apply little social pressure to participate in drinking, and usually consume alcohol with meals.

Racial differences in drinking patterns occur with the American Indians who have a much higher per-capita rate of alcoholism than Black, Asian, Chicano, or white Americans.

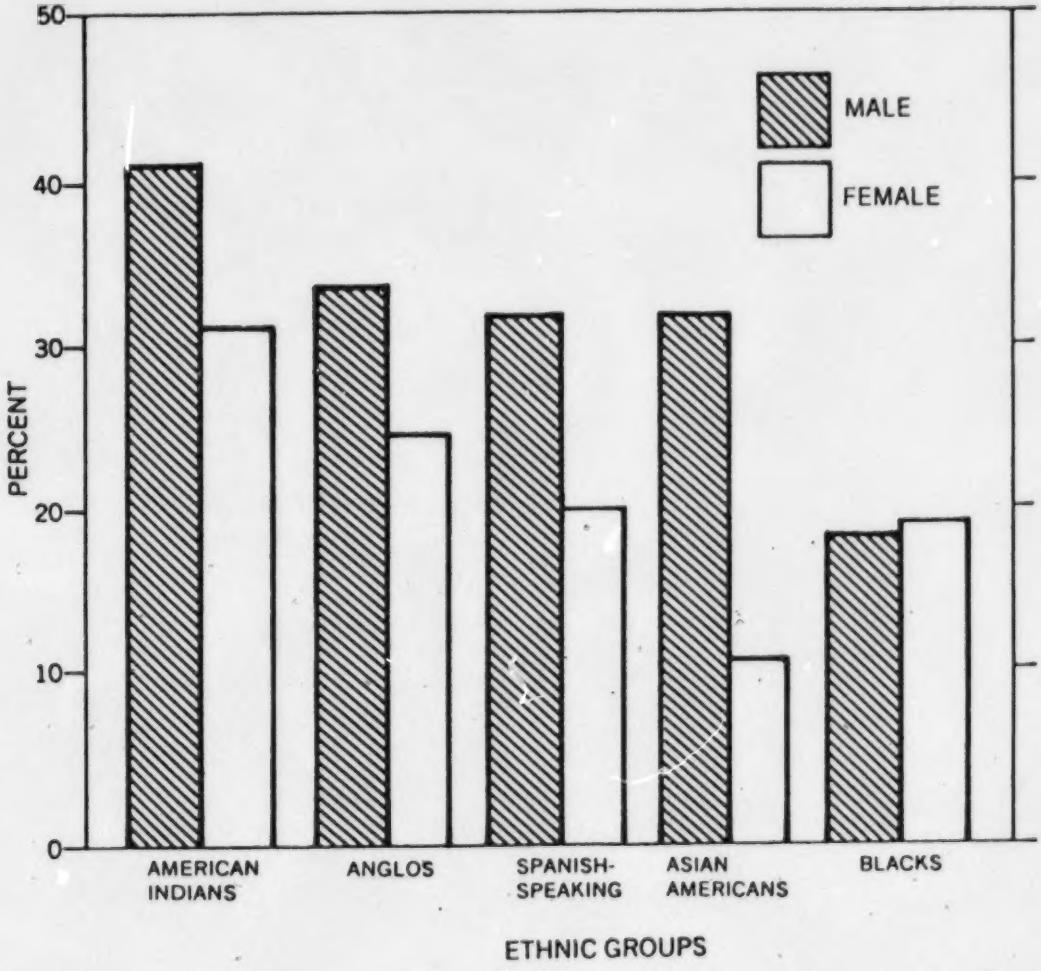
The table below indicates some of the differences in drinking patterns between black and white Americans according to Cahalan's study.

TABLE I PERCENTAGE OF RESPONDENTS BY RACE AND SEX

	N	Abst.	Infreq.	Light + Mod.	Heavy	%Heavy of All Drinkers
Total sample	2746	32	15	41	12	18
White	2511*	31	15	42	12	17
Black	200	38	12	36	14	23
Men						
White	1082	23	10	45	22	29
Black	82	21	13	47	19	24
Women						
White	1429	39	19	38	4	7
Black	118	51	11	27	11	22

* Excluded are 35 persons of other races.

FIGURE 4 PROBLEM DRINKING BY SEX AND ETHNIC GROUP



D. Religious Affiliation

One of the most closely studied drinking control systems has been the degree and type of involvement with religion. Abstinence is distinctly more frequent among members of certain religious groups.

Calahan's survey revealed that there were relatively high proportions of drinkers and heavy drinkers among Catholics. Although Jews had

the lowest proportion of abstainers among the three major religions, they had a very large proportion of light drinkers and the lowest proportion of heavy drinkers. Liberal Protestants showed a pattern rather similar to that of the Catholics in proportions of drinkers, except that there were fewer heavy drinkers among the liberal Protestants. Conservative Protestants had the largest proportion of abstainers and the lowest proportion of heavy drinkers when the four groups were compared.

The 1972-74 surveys indicate that the same basic relationship exists among the three major religions, but there appeared to be an increase in both light and moderate drinking among Jews and Catholics. The proportions of Protestants in these categories have remained about the same since 1965. The 1972-74 data show, however, that the proportion of respondents who said they had no religious affiliation is about double that in 1965. Thus, some changes within denominational categories may be accounted for by secularization.

The relation between religious participation and drinking patterns of adolescents has received considerable attention in a number of studies. The frequency of church attendance has been viewed as a behavioral measure of involvement in the adult social control system and of exposure to conventional norms. In a longitudinal study of drinker status in adolescence, one group of investigators reported that religiousness and frequency of church attendance were strongly related to abstinence.

On an index of religious participation, problem drinkers among highschool students in Mississippi tended to score lower than nonproblem drinkers in one study. Similar relationships were reported in a review of two nationwide surveys of American youth.

TABLE 2 PERCENTAGE OF RESPONDENTS BY RELIGION AND SEX

	N	Abst.	Infreq.	Light + Mod.	Heavy	% Heavy of all Drinkers
Total Sample	2746	32	15	41	12	18
Conservative Protestant	1305	48	14	31	7	13
Methodist & Similar*	515	34	17	39	10	15
Baptist	521	53	11	29	7	17
Other Conservative Protestant	269	64	12	21	3	8
Liberal Protestant**	471	20	15	52	13	16
Lutheran	207	19	14	52	15	19
Presbyterian	159	25	16	47	12	16
Episcopalian	80	9	13	66	12	13

Continued from page 112.

	N	Abst.	Infreq.	Light + Mod.	Heavy	% Heavy of all Drinkers
Protestant, no denomination	46	35	10	35	20	29
Catholic	764	17	15	49	19	23
Jewish	73	8	26	56	10	11
No religion; not ascertained	69	21	13	46	20	25
Miscellaneous	18					
Men						
Conservative Protestant	550	35	13	39	13	20
Methodist and similar	219	26	16	40	18	24
Baptist	226	37	9	41	13	21
Other Conservative Protestant	105	49	15	32	4	8
Liberal Protestant	193	13	8	56	23	26
Lutheran	84	14	7	54	25	29
Presbyterian	69	17	8	55	20	24
Episcopalian	32	2	8	65	25	26
Catholic	330	9	6	52	33	36
Jewish	27	4	11	60	25	26
Women						
Conservative Protestant	755	58	14	25	3	7
Methodist & Similar	296	40	18	38	4	7
Baptist	295	66	13	18	3	9
Other Conservative Protestant	164	75	10	13	2	8

	N	Abst.	Infreq.	Light + Mod.	Heavy	% Heavy of all Drinkers
Liberal Protestant	278	24	20	50	6	8
Lutheran	123	23	20	50	7	9
Presbyterian	90	31	21	41	7	10
Episcopalian	48	13	17	67	3	3
Catholic	434	22	22	47	9	10
Jewish	46	11	36	53	0	0

*Methodists, United Church of Christ, Congregationalists, Disciples of Christ Evangelical, United Brethern.

**Liberal Protestants include a few persons of miscellaneous denominations in addition to the three denominations listed.

E. Education

As in 1964-65, the amount of education is still strongly related to whether a person drinks and to the quantity consumed. The highest proportion of abstainers is found among persons with less than an 8th-grade education. The proportion of heavier drinkers increases fairly steadily from those with grammar-school education to those with postgraduate training. There are slightly more heavier drinkers among college graduates than among persons with postgraduate education, however.

TABLE 3 PERCENTAGE OF RESPONDENTS BY EDUCATIONAL LEVEL

	N	Abst.	Infreq.	Light + Mod.	Heavy	% Heavy of all Drinkers
Total sample	2746	32	15	41	12	18
Grammar school or less	710	47	13	29	11	20
Some high school	554	34	16	40	10	15
Completed high school	723	26	18	42	14	19
Some college	444	26	13	46	15	20
College graduate	315	18	11	59	12	15

F. Socioeconomic Status

Recent surveys of adults continue to substantiate the previously documented relationship between social class and alcohol consumption--proportionately more people on the lower socio-

economic levels are abstainers than on the upper levels. These surveys also reveal that moderate and heavier drinking increases as social class rises.

The results of surveys among adolescents generally agree with this finding. A recent study of Toronto junior and senior high-school students shows that alcohol use was highest among children whose fathers were professionals or managers. A nation-wide survey of young American men indicates that the wealthier among them increased their regular use of alcohol (once a week or more) by 21 per cent after high school, compared to a 5 per cent increase among the poorer men.

TABLE 4 PERCENTAGE OF RESPONDENTS BY FAMILY INCOME AND SEX

	N	Abst.	Infreq.	Light + Mod.	Heavy	% Heavy of all Drinkers
Total sample	2746	32	15	41	12	18
Family Income						
Under $2000	349	56	13	26	5	11
$2000-3999	450	49	14	29	8	16
$4000-5999	547	36	14	39	11	18
$6000-7999	521	25	17	48	15	20
$8000-9999	387	24	14	48	14	18
$10,000-14,999	315	16	16	51	17	20
$15,000 +	174	16	11	58	15	18
No information	3					
Men						
Under $2000	111	44	13	35	8	14
$2000-3999	173	34	14	39	13	20
$4000-5999	223	21	11	46	22	28
$6000-7999	253	21	11	44	24	31
$8000-9999	168	18	7	51	24	29
$10,000-14,999	158	13	8	50	29	34
$15,000 +	89	15	4	57	24	28
Women						
Under $2000	238	63	13	21	3	8
$2000-3999	277	60	14	21	5	11
$4000-5999	324	47	16	34	3	7
$6000-7999	268	29	23	42	6	8
$8000-9999	219	28	19	47	6	8
$10,000-14,999	157	18	25	52	5	6
$15,000 +	85	17	17	60	6	7

G. Occupation

Cahalan's survey showed that as a group, farm owners had the lowest proportions of drinkers and heavy drinkers, whereas professionals and businessmen had the highest proportion of drinkers. Semi-professional men who drink had the highest proportion of heavy drinkers, and among women who drink, service workers had the highest proportion of heavy drinkers.

A survey of 528 executives from among the 500 largest manufacturing companies and from each of the 50 largest banks, utilities, and transportation, merchandising, and life-insurance companies in the United States was conducted in 1972. The results of this study strikingly showed that only seven percent of the men were abstainers or drank less often than once a month, compared to 33 percent of all men in the country in Cahalan's 1964 survey. The proportion of heavy drinkers was considerably less than that found in Cahalan's national probability sample, however: 13 percent of the executives were classified as heavier drinkers compared to 21 percent of the men in the national sample. Most of the executives (48 percent) were moderate drinkers, but 17 percent said they worried that they were "doing too much drinking." Figures were not available for women in similar positions.

H. Residence

Alcohol consumption varies considerably by geographic region in the United States. There are proportionately more drinkers in New England and the Middle Atlantic and Pacific Coast States than elsewhere.

Although earlier studies disclosed that heavier drinking was also more prevalent in these highly urbanized areas, it appears from more recent surveys that previously strong regional contrasts may be decreasing, even though the basic distinctions still exist. It now seems that the proportion of heavier drinkers is increasing slightly in such traditionally "light" drinking areas as the Southeast and Mountain States, and that it is decreasing slightly in the Coastal and Middle Atlantic regions. It is difficult to determine whether these shifts may be due to real changes in individual drinking habits or to the rather complex mobility patterns of the population as a whole.

Rural areas and small towns have larger proportions of abstainers, and cities and suburbs have proportionately more drinkers. Cities and suburbs continue to have almost double the proportion of moderate drinkers as small towns and rural areas. Whereas Cahalan's survey showed that the largest proportion of heavy drinkers lived in cities, the more recent surveys (1972-74)--using a lower quantity-frequency index for "heavy drinking"--classify equal proportions of suburban and city dwellers as heavier drinkers (12 percent each). Small towns and rural communities have smaller proportions of heavier drinkers (nine and eight percent, respectively).

III. PROFILE OF PROBLEM AND NON-PROBLEM DRINKERS

Analysis of the data from the 1973 national survey revealed the following profile of drinkers:

CHART I PERSONS MOST LIKELY TO HAVE NO ALCOHOL-RELATED PROBLEMS

1973

Lowest rates of alcohol-related problems for respondents in the 1973 national survey were found among:

- Women
- Persons over 50
- Widowed and married persons
- Persons of Jewish religious affiliation
- Residents of rural areas
- Residents of the South
- Persons with postgraduate educational levels
- Persons who are mostly "wine drinkers"

PERSONS MOST LIKELY TO HAVE HIGH PROBLEM RATES 1973

Highest rates of alcohol-related problems for respondents in the 1973 national survey were found among:

- Men
- Separated, single, and divorced persons (in that order)
- Persons with no religious affiliation
- Persons who are beer drinkers as compared with those who are mostly hard liquor or wine drinkers
- Persons who were more likely (compared to other persons in the survey) to say: "Drunkenness is usually <u>not</u> a sign of social irresponsibility"

  and

  "Drunkenness is usually a sign of just having fun"